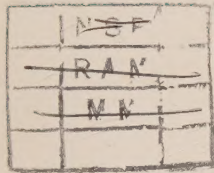


**THE REPUBLIC
OF UGANDA**



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too
old



**Annual Report
of the
AGRICULTURE
DEPARTMENT**

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of the**

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*For the year ended
31st December, 1966*

Annual Report
of the
DEPARTMENT OF AGRICULTURE

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FOREWORD BY THE HONOURABLE J. B. T. KAKONGE, M.P.,
MINISTER OF AGRICULTURE AND FORESTRY

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FOREWORD

The Second Five-Year Development Plan was launched in 1966. Unlike the First Plan which focused on cotton and coffee as major sources of foreign exchange, the Second Plan aims at diversifying the economy to lessen the country's dependance on the two crops.

A major step was made in the improvement of the quality of coffee and tea. Perhaps the most significant step made during the year was the establishment of the Uganda Tea Growers Corporation (UTGC) which every Ugandan must be proud of.

In 1966, Uganda achieved an all-time record for Cotton Production of over 445,000 bales. The staff of the Department of Agriculture, the farmers and the co-operating organisations are to be congratulated on this achievement.

In the field of agricultural education, it is gratifying to note that the Home Economics course was for the first time introduced at Bukalasa Agricultural College. Progress was also made in this field when eighty Assistant Agricultural Officers successfully completed their diploma course. On behalf of my Ministry, I should like to convey my gratitude to Foreign Governments which offered assistance in agricultural education.

Several development schemes such as Kinyala Sugar Scheme, the Pilot Irrigation Project, Rural Credit, Tractor Hire Service, Citrus and Cocoa schemes which were launched in the First Five-Year Development Plan continued to be carried out smoothly and it is hoped that targets will be achieved during the current Plan.

J. B. T. KAKONGE,
Minister of Agriculture and Forestry.

THE REPUBLIC OF UGANDA

DEPARTMENT OF AGRICULTURE

Annual Report

For the Year ended 31st December, 1966.

I. INTRODUCTION

(a) Policy

SINCE UGANDA'S economic well-being and future prosperity depends, and will continue for the foreseeable future to depend on agriculture, the Department's efforts have continued to be directed towards increased agricultural production in order that the economy may expand rapidly. In order to achieve the above broad objectives, the Department's agricultural policy has continued to be based on the following:—

(i) to conserve soil, water and other natural resources;

(ii) to enhance the natural fertility of the land by the introduction of improved livestock and their integration with arable crops;

(iii) to increase production and improve the quality of cash crops to enable the people to enjoy a better standard of living, and to increase the revenue of the country;

(iv) to increase the production and quality of industrial crops both for export and for local industry;

(v) to carry out research, field experimentation and investigations designed to improve yields and quality of both crops and livestock, and to find out the best methods of land and pasture utilization;

(vi) to supply planting materials of proven, new and improved crop varieties and to advise on methods of cultivation;

(vii) to maintain and enlarge a well-informed extension service for imparting to the farming community up-to-date information on all farming aspects including agricultural credit and marketing;

(viii) to discharge certain statutory obligations in connection with the marketing and processing of crops;

(ix) to execute a vigorous crop production diversification scheme to reduce Uganda's reliance on cotton and coffee.

2. The First Five-Year Development Plan finished at the close of the 1965/66 financial year, and the Second Five-Year Development Plan was published in May, 1966. Emphasis in the First Plan was placed on increasing cotton production, particularly by means of subsidies on cotton spraying insecticide and agricultural equipment. Another major development in the period was the introduction of Group Farms and the expansion of the Tractor Hire Service. Measures were included to raise coffee quality, to develop outgrower tea production, to improve tobacco growing, and to continue with the introduction of cocoa. A groundnut-grading plant was also set up.

3. The Information and Visual Aids Centre at Entebbe was completed and brought into operation. In addition, major expansions were made for training facilities at Agricultural College and District Farm Institute levels. A 3½-year census of Agriculture was carried out with the help of the Food and Agriculture Organisation of the United Nations, and a series of economic studies into peasant farming instituted.

4. The rural sector of the Second Five-Year Plan is part of a long-term plan aimed at doubling the per capita monetary income by 1971. Proposals envisage the continuation of the main lines of development introduced in the First Plan. Emphasis on the participation of co-operatives in all fields continued with particular stress on crop production and marketing, the credit service, and trade. Development of Group Farms and the expansion of tractor cultivation continued, and means of putting resources into the hands of farmers to enable them to increase their productivity was further explored.

5. A Tea Corporation was formed to handle the expansion of the tea industry, and projects envisaged included the introduction of sisal growing, development of citrus, tobacco, cocoa and rubber, expansion of sugar growing with outgrower participation, provision of improved seeds, and the setting up of pilot irrigation projects.

(b) General Review

6. Buganda Region received favourable weather conditions during the year, except for July and August which were dry. Elsewhere, the year 1966 was characterised by variable weather conditions. Western Region received fairly evenly distributed rainfall, apart from southern parts of Ankole and eastern Kigezi where the rainfall was inadequate and badly distributed. In Eastern Region, Busoga and Teso districts had satisfactory weather conditions. Bugisu, however, experienced unfavourable weather conditions for a short period of the year. In Bukedi, the first and second rains were very much delayed and in Karamoja the weather patterns remained generally unfavourable. Weather conditions in Northern Region exhibited considerable variation. The first rains in Lango started earlier than usual; elsewhere in the Region, the rainfall did not follow the usual pattern.

7. This considerable variation in the weather patterns caused some food shortages in a number of areas in Uganda, and it was necessary to continue to organise food supplies to stricken areas in Karamoja, Teso and Ankole.

8. The staff discontinuity which was experienced in previous years was successfully overcome as Ugandans appointed in responsible posts became settled in their jobs. Various courses were held for extension staff and this greatly improved the standard of extension teaching.

The Young Farmers of Uganda Programme became a well-established and popular organisation. The total membership increased from 4,710 in 1965 to 7,575 in 1966. Members continued to establish various animal and crop projects which, in several instances, were used as nuclei for demonstrating prescribed crop and animal husbandry practices.

The Information and Visual Aids Centre which made its debut the previous year continued to support the extension services in all aspects. The Cinema Vans continued to tour various areas of the country. The films proved very popular as evidenced by large audiences. In addition to providing agricultural knowledge, the rural farming population found it a useful recreational facility.

9. The total cotton lint production from the 1965/66 crop amounted to a record crop of 445,181 bales. The return to the grower was £15,871,604. This record crop was achieved through an increased acreage of 2,263,000 acres as compared to 2,138,000 acres during the previous season, and increased use of insecticide and the adoption of improved husbandry practices. The 1966/67 cotton crop acreage dropped from 2,263,000 acres to 2,174,000 acres.

10. The export value of the total coffee crop amounted to £34,783,274 of which an estimated £19,013,142 went directly to the growers. This compares with £30,421,334 in 1965 of which an estimated £15,099,679 went to the growers.

11. In 1966, Uganda produced 1,548 tons of fire-cured tobacco as compared to 2,701 tons in 1965. The crop was grown in Bunyoro, Mubende and West Nile districts. The flue-cured tobacco in 1966 yielded 1,144 tons of which some 22 tons were exported. Plans for a vigorous expansion scheme of flue-cured tobacco were initiated, and tobacco-curing barns were built in West Nile, Madi, Acholi, Lango and Kigezi Districts with loan finance provided by the United Kingdom Government. The total value of the tobacco crop to growers amounted to £576,422 in 1966, as compared with £621,863 in 1965.

12. The Board of Directors of the Uganda Tea Growers Corporation was appointed in April, 1966. The appointment of the General Manager took place in August, 1966. Staff from the Department of Agriculture and from the Department of Co-operative Development were posted to the Corporation for specific duties the following year. Shortage of planting materials in the year caused 1,327 acres only to be planted by smallholders. This brought the acreage by the close of the year to 5,504 acres. The quantity of tea from estates and smallholders' gardens was 11,037 tons as compared to 8,233 tons in 1965, an increase of 34 per cent. The estimated value was £4,079,380 and £3,043,228, respectively.

13. The production of sugar from the main sugar estates in 1966 amounted to 125,478 tons, compared with 115,670 in 1965. The Planning of the Kinyala Sugar Scheme in Bunyoro was completed, and 600 acres of seed gardens were

planted. It was expected that the financing of the scheme would be finalised in 1967 to enable the scheme to start in 1968. The quantities and type of sugar sold to neighbouring countries are shown below :

Sugar	...	4,465 tons valued at £219,966
Molasses	...	752 tons valued at £1,917

14. Shortage of funds and the drop in world price affected the cocoa expansion programme which had been envisaged. In 1966, a total of 884 acres of cocoa were planted, bringing the total to 2,329 acres of non-estate cocoa. Pods worth Shs. 41,653 were sold to the Department of Agriculture by the farmers in Buganda and Busoga.

15. The co-operative movement in Uganda continued to play an active part in the cotton and coffee industries. During the year under review, the co-operatives handled 100 per cent of cotton marketing and processing in West Nile, Acholi, Masaka and Bunyoro, 90 per cent in Lango, 65 per cent in Busoga, 70 per cent in Mbale zone and 40 per cent in Mengo District. The co-operatives have a virtual monopoly of coffee processing in all Regions except Buganda.

(c) Liaison with Local Administrations and other Departments

16. In general, there was good relationship and co-operation with officials of District Governments and the Department of Agriculture. As a result, campaigns for increased cotton and food crop production proved very satisfactory. Co-operation with other departments was also very satisfactory, and several joint field trips and campaigns were organised.

II. WEATHER

17. The year 1966 was characterised by variable weather conditions in most areas of the country. In Buganda, however, the weather patterns were fairly normal, though July and August were drier than usual. In Western Region, Ankole and Kigezi generally received inadequate rainfall; elsewhere in the Region, weather conditions remained favourable. In Eastern Region, Teso District experienced a very dry and hot January and February. The rains broke in March and followed the normal pattern except for April and October when heavy rains fell. Weather conditions were more favourable in Bukedi District than the previous year. Heavy rains which fell in May caused some flooding. Bugisu experienced rather abnormal weather conditions with severe dry weather conditions in January, May, June, November and December. In August, heavy rains fell causing some landslides in Manjiya county. The remainder of the year followed the normal weather pattern. Busoga received fairly normal rains during the year. Karamoja on the other hand experienced weather conditions which appeared completely changed from the usual pattern. In Northern Region, the weather showed many variations from the usual pattern and it was generally unseasonal and irregular. In Lango District, the first rains came earlier than

usual, and elsewhere most of the rain occurred in March. Throughout the Region, generally, the rains trailed off in October, and the remaining months were hot and dry. In view of this, the total rainfall was below average in the Region.

III. FOOD CROPS AND FOOD SUPPLIES

18. Food shortages caused by unfavourable weather conditions in 1965 were again evident in certain areas in 1966. Consequently, it was necessary to organise food supplies to stricken areas in parts of Ankole, Karamoja and Teso.

19. Because of the previous season's experience of food shortages, farmers planted food crops every time weather conditions permitted. Increased planting was encouraged by the staff of the Department of Agriculture and officials of the District Administrations who organised successful field campaigns as evidenced by the increased acreage planted to food crops. Unfortunately, the unfavourable weather conditions adversely affected the yields of crops, thus off-setting the expected increase in crop yields.

IV. ECONOMIC CROPS

(a) Cotton

20. As the crop years overlap, the Report deals with the marketing of the 1965/66 cotton crop and the production of the 1966/67 cotton.

(i) 1965/66 Season

21. The joint campaigns by the staff of the Department of Agriculture and the officials of District Administrations and Co-operative Unions which began in 1964 were continued very successfully, and these campaigns were greatly assisted by the Cinema vans of the Information and Visual Aids Centre which showed films on all aspects of prescribed cotton husbandry techniques. Early sowing, proper spacing and timely spraying with a D.D.T. insecticide were emphasised.

22. Marketing the crop began as usual in November, and the growers were paid 60 cents per lb. of seed cotton for BP.52 "safi" and 59 cents per lb. of seed cotton for S.47 "safi". The price for "fifi" in all cases was 25 cents per lb. of seed cotton. In terms of cash, the estimated return to the growers is £15,871,604, which is lower than the estimated £16,761,627.

(ii) 1966/67 Season

23. The well-established joint campaigns were continued in 1966/67 season, placing emphasis on all aspects of prescribed husbandry practice. The response generally was favourable. In Buganda, the expected increase in production was foiled by the 1966 disturbances which broke out in May, when farmers should have been preparing their cotton plots. As a result, the acreage planted to cotton fell from 263,862 to 223,395 acres. Shortage of storage facilities delayed cotton seed distribution and affected the expected early planting and increase in acreage. The variable weather did not seriously affect cotton growth. A total of 2,174,000 acres were planted, and the yield was estimated to be 427,000 bales.

24. Marketing began in November in the Eastern and Northern Regions, and in December in Buganda and Western Regions. The prices paid to the growers were 40 cents for both BP.52 and S.47 "safi". The price for "fifi" was 25 cents per lb. It was estimated that the total return to the growers would amount to £15,264,000, a decline due to a lower price per lb. paid for seed cotton.

(iii) *Multiplication of New Strains of Cotton*

25. This programme continued into its last phase in 1966. The SATU and BPA types of cotton were bulked ready for distribution to replace the S.47 and BP.52 which are out-yielded by 20 per cent. The replacement was to be phased over a four-year period to ensure an orderly replacement programme.

26. Cotton seed dressing was carried out in the usual specified ginneries, and the free issue of cotton seed continued.

(iv) *Cotton Spraying*

27. Great emphasis has continued to be placed on cotton spraying with a D.D.T. insecticide. The response to cotton spraying has not been very spectacular, but it is gradually becoming an accepted farming operation as evidenced by the number of tins purchased each year under the subsidy scheme.

(b) *Coffee*

(i) *Bugisu/Sebei Arabica, 1965/66 Season*

28. Due to the normal biannual fluctuation in yield, flowering during the season was profuse and an all-record crop was achieved. An average yield of 9.6 cwt. per acre parchment was obtained as compared with a five-year average of 4.9 cwt. per acre. The average price per ton for all coffee sold was £324 per ton f.o.r. Nairobi.

29. The total crop production was 13,023 tons parchment and 83 tons of buni, the estimated value to growers being £2,443,604 and £4,627, respectively.

Table A—Bugisu/Sebei Coffee Purchases and Production : 1965/66 Season

GRADE	1965/66 SEASON			1964/65 SEASON		
	Parchment	Price/lb.	Estimated value to growers	Parchment	Price/lb.	Estimated value to growers
	<i>Tons</i>	<i>Shs. cts.</i>	<i>£</i>	<i>Tons</i>	<i>Shs. cts.</i>	<i>£</i>
'P'	132.23	1 80	26,657.6	93.21	2 05	21,400.6
No. I	12,417.42	1 70	2,364,276.8	3,857.57	1 85	799,289.4
No. II	469.22	1 00	52,552.6	221.75	1 15	28,561.0
No. III	4.20	0 25	117.6	4.86	0 25	136.0
TOTAL	13,023.07	—	2,443,604.6	4,177.39	—	849,387.0
BUNI	82.63	0 50	4,627.3	79.96	0 50	4,477.6
GRAND TOTAL	13,105.7	—	2,448,231.9	—	—	853,864.6

(ii) *Bugisu/Sebei Arabica, 1966/67 Season*

30. The 1966/67 crop was ready for harvesting from August onwards. In many areas, the yields were estimated to drop about 30–50 per cent below the previous season's crop and the total yield was estimated to amount to 6,500–8,500 tons of parchment.

(iii) *Coffee Replacement Scheme*

31. Nurseries were well maintained and 1,571,504 seedlings raised at these nurseries were issued to the growers for replacement planting. This total replaced 2,311 acres.

(iv) *Central Pulperies*

32. Owing to lack of funds to purchase wet cherry, some of the pulperies were not fully utilised. The three pulperies in Sebei and one at Lwangoyo, in Bugisu, remained silent throughout the season because they could not obtain finance.

33. Two pulperies built at Busano and Bumalye were completed by the end of October, but by then all coffee had been picked. Improvements and general repairs were carried out on all existing central pulperies in Bugisu.

(v) *Coffee Disease and Pest Control*

34. Thirteen thousand two hundred and twenty-six acres were sprayed with 0.68 pints per acre of Fenitrothion 50 per cent m.l. Spraying was carried out at the rate of 1.84 acres per day using motoblo sprayers at a cost of Shs. 23/45 per acre. The increased acreage sprayed and general improvement in efficiency of spraying reduced cost.

Table B—Bugisu Arabica Coffee Team Spraying

Year		Acres sprayed	Estimated Cost/ Acre
			Shs. cts.
1959	..	1,436	*
1960	..	11,400	*
1961	..	9,356	31 08
1962	..	7,700	*
1963	..	5,057	33 90
1964	..	8,950	32 40
1965	..	9,569	35 51†
1966	..	13,226	23 45

* Not available.

† This figure includes in item of Shs. 2.59 per acre for depreciation on machines.

(vi) *Fertilizer use on Coffee*

35. The Bugisu Co-operative Union purchased 200 tons of Ammonium Sulphate Nitrate in 50-lb. bags for applying in the second rains. The Departmental staff held meetings and demonstrated the use of fertilisers at every

Society centre in Bugisu and Sebei, with a view to arousing interest among as many people as possible in using fertilisers. This campaign stimulated much interest, but due to transport difficulties, only 20 tons were used.

(vii) *Coffee other than Bugisu Arabica*

36. Encouraging farmers to adopt improved cultural practices continued to be the main activity of the Departmental staff. In Buganda, weather conditions were favourable for coffee growth and yields were reasonable. The standard of husbandry was satisfactory and in Mubende some 97 farmers bought 30 tons of artificial fertilizers for application to their coffee plots. Several wet processing factories were built during the year. In Western Region, the Coffee Development Section carried out team spraying to control *antestia* in specified areas. A total of 7,788.98 acres were sprayed as compared with 6,906 sprayed in 1965. In Northern Region, replacement of *robusta* with *arabica* was carried out on a moderate scale. Sequential sampling revealed a high incidence of *antestia*. Due to lack of funds, the recommended spraying could not be done.

Table C—Robusta Prices in Cents per Pound

Dates		Dry Cherry	Rough Hulled	Parchment
<i>From</i>	<i>To</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
19-7-1965	15-8-1966	40	83	75
22-8-1966	31-12-1966	40	83	75

(c) Tobacco

(i) *Flue-cured*

37. Production of flue-cured tobacco is confined to West Nile, Acholi and Lango Districts of Northern Region. In Acholi District, 900 acres were planted to tobacco which yielded 297,692 lb. of cured leaf. In Lango District, flue-cured tobacco continued to be grown in Ngai sub-county; 15½ acres were grown, yielding 2,129 lb. of cured leaf. In West Nile, the *Master growers* continued to produce the entire crop, and a total of 1,900 acres were planted to tobacco, yielding 2,226,190 lb. of cured leaf. The average price per lb. of cured leaf in West Nile was Shs. 3/40. Acholi and Lango averaged Shs. 3/07 per lb. of cured leaf.

38. In all, a total of 1,144 tons of cured leaf were bought and the value to the growers amounted to £430,678.

(ii) *Fire-cured*

39. This type of tobacco continued to be grown in West Nile, Bunyoro and Mubende. In West Nile, a good crop was grown. Three newly formed Tobacco Co-operative Societies bought tobacco direct from their members. The societies were granted crop finance by the Uganda Commercial Bank with a British American Tobacco (Uganda) Ltd. guarantee. The staff of the Department of

Agriculture, B.A.T. (U) Ltd., and the Co-operative Development gave the necessary technical advice and supervision. The Societies handled 20 per cent of the district crop.

40. In Bunyoro District, Bunyoro Co-operative Union continued to act as agent on behalf of B.A.T. (U) Ltd. and Transcontinental Leaf Tobacco Company. Total production of fire-cured tobacco was 1,548 tons valued at £145,744.

(d) Tea

41. In Toro District, 152 new growers were registered during the year, bringing the cumulative total to 689 growers. The acreage planted exceeded the target of 890 acres, and a total of 2,613,000 tea stumps were distributed by Agricultural Enterprises Limited, and 501,000 from private nurseries.

42. In Bunyoro, 90 acres were planted as compared to 67 acres planted in 1965. The number of small tea-growers increased from 43 in 1965 to 77 in 1966. Most of the stumps were distributed by A.E.L. In Kigezi, a total of 271 acres were planted, and in Ankole 263 acres were planted, exceeding greatly the set target for the districts. As elsewhere, the stumps were distributed by Agricultural Enterprises Limited.

Table D—Tea Green Leaf Production in Western Region (lb.)

District			1964	1965	1966
Ankole	..	..	101,163	213,429	435,863
Toro	..	..	1,580,404	2,893,288	9,343,893
Kigezi	..	..	90,879	229,249	539,925
Bunyoro	..	..	—	713	19,070
TOTAL ..			1,772,446	3,336,675	10,338,751

43. Due to the 1966 disturbances, the planting figures in Buganda are not known, but it is reported that there was moderately extensive planting. Total estimated value of the crop amounted to £4,079,380.

(e) Sugar

44. The sugar-cane outgrower scheme in Buganda expanded greatly during the year, particularly in Kyaggwe county where the acreage rose from 500 to 2,000 acres. There was also a corresponding increase in the number of out-growers. This increase was attributed to the favourable price which ranged from Shs. 40 to Shs. 50 per ton during the first six months, but this price dropped to an average of Shs. 30 per ton as a result of tax levied on sugar factories. This, however, did not affect seriously the increase in planting, and several farmers uprooted coffee to replace it with sugar-cane.

45. In Busoga, farmers in the vicinity of Madhvani Sugar Works Estate, Kakira, participated in the outgrowers scheme. Sugar-cane grown was sold to the Factory.

46. The Lango District Land Board agreed to lease about 21,000 acres of land in Aber sub-county, West Lango, to Bharat Cotton Company Limited to grow sugar-cane in partnership with the District Council. About 5,000 acres were surveyed and clearing started, but due to waterlogging, progress was greatly hampered. Seven (7) acres had been planted to sugar-cane to provide seed cane. However, the future of the scheme is rather obscure.

47. Total sugar production during the year under review amounted to 125,478 tons as compared to 115,670 tons in 1965. The total value was £5,107,620 as compared to £4,770,606 in 1965.

(f) Cocoa

48. The cocoa expansion scheme did not progress as originally planned. In Bunyoro, the three nurseries established in 1965 produced seedlings sufficient to plant 220 acres, bringing the total acreage under cocoa to 352 acres at the end of the year. In Toro, 85 acres were planted, making the total to date 204 acres. Seven thousand one hundred and seventy-five pounds (7,175 lb.) of cocoa pods were bought at a total cost of Shs. 3,945/25 in Bunyoro, and 135,809 lb. at Shs. 9,551/70 in Toro.

49. Cocoa growing continued to be popular in Kyaggwe and Bugerere counties where the crop is successfully grown. The cocoa trials at Mwera in Mubende, Namyoya in Bombo and Kamenyamigo in Masaka continued to be maintained. During the year, 514 acres were planted, making a total of 1,564 acres under cocoa in Buganda Region. Growth of the crop was satisfactory, but *helopeltis* and monkeys continued to cause serious damage. The total pods collected were worth Shs. 41,184/10 as compared to Shs. 38,660/55 in 1965. Total production of cocoa in Uganda was 24 tons valued at £6,466.

(g) Maize

50. Due to low maize prices in 1965, the acreage planted during 1966 in Buganda decreased. Towards the end of 1965, reasonably high prices were obtained for maize in Western Region and the acreage in 1966 increased, especially in Bunyoro where the increase was greatest in the settlement areas. Elsewhere in Uganda, maize was planted on a small scale for home consumption.

51. Overseas export of milled and unmilled maize totalled 36,445 tons valued at £736,220. Exports to Kenya and Tanzania of milled, unmilled and germ maize meal amounted to 15,179 tons worth £270,086.

52. The estimated acreage under maize on a country-wide basis was 690,200 acres. Had the price remained favourable in the principal growing areas, a greater acreage would have been planted. The price in the main markets varied between 6 cents and 16 cents per lb.

(h) Minor Crops

(i) Vanilla

53. A few farmers in Bombo Division continued to be interested in the crop and some 10,000 two-foot vines were given free by Nsimbe Estate to farmers in Kyaggwe county. Farmers sold their vanilla to Lubowa Estates.

(ii) *Ginger*

54. This crop was grown mainly in Butambala and Mawogola counties of Mpigi Division. The growth conditions of the crop during the year were not very satisfactory. Yield and prices remained low.

(iii) *Vegetables*

55. Considerable importance was attached to vegetable production. In Buganda, a full time Agricultural Officer was posted to the main vegetable-growing areas to assist farmers in producing quality crops. In Kigezi, the vegetable scheme made steady progress. Approximately, 1,300 growers organised themselves into seven Primary Co-operative Societies and a Union for vegetable production and marketing. Although no Government loan could be secured, the societies were able to raise sufficient funds from their own resources for the development of the scheme. An F.A.O. operational expert was stationed in Kabale, Kigezi District, to organise and promote the scheme.

56. The Kigezi Vegetable Union collected over 2,000,000 lb. of mixed vegetables from members of the Societies. For the first time, the Union was able to fulfill its contracts in its established markets in Kabale, Mbarara, Masaka and Kampala.

57. In Bugisu, attempts to organise vegetable growers into a co-operative society were unsuccessful because few prospective members bought shares. Consequently, production was not as well organised as intended. Efforts to establish vegetable growing in the district along the Kigezi lines continued.

(iv) *Cassava*

58. The Cassava Factory of the Lango Development Company Limited continued to collect cassava from farmers at a rate of one ton per day; 300 to 400 tons of fresh roots of cassava were handled. There was some difficulty in disposing of the cassava flour as there was no local demand. The extension of the factory and the installation of starch-making equipment was almost completed by the end of the year. It was hoped the factory would begin making starch by 1967.

(v) *Castor Seed*

59. This crop is grown mainly in Mubende District, Buruli and Bugerere counties and it is planted mainly on edges of plots. Elsewhere, production was negligible.

(vi) *Groundnuts*

60. Despite some unfavourable weather conditions, planting of groundnuts increased. The acreage planted to groundnuts was 669,400 acres as compared to 582,100 in 1965. Of the total crop produced, 314 tons worth £18,651 were exported to Kenya and Tanzania. In addition, a total of 72 tons of groundnut oil valued at £1,773 were sold to the same countries. Exports overseas did not increase appreciably as only 8,121 tons were exported worth £474,553.

61. Owing to the continued shortage of groundnuts to operate the Busoga Co-operative Union's Groundnut Grading Unit at Nsinze, the Unit could not be reopened.

(vii) Cereals

62. Cereals, which form staple diets in many districts, were planted fairly satisfactorily. The localised food shortages in the previous year encouraged increased planting.

V. AGRICULTURAL DEVELOPMENT AND EXTENSION WORK

(a) Soil Conservation

63. Major importance is placed on soil conservation by the Department of Agriculture. Departmental staff continued to co-operate with chiefs, progressive farmers and farmers' clubs to encourage all possible means of soil preservation; these include contour cultivation, ridging, mulching, strip cropping, discriminate grass burning, paspalum bunding and the use of 3-yard wide grass strips. Terraces were constructed at Suam. Grass strips and bunding were constructed elsewhere. In Buganda, an estimated 113 miles of bunds were made in comparison to 249 miles in 1965. Grass fires proved a problem in Northern Region.

(b) Progressive Farmers

64. Although there was a decline on the number of progressive farmers, field staff continued to advise this class of farmers. The U.S.A.I.D. Extension Specialist carried out a qualitative survey into the operation of the scheme with a view to finding out solutions to the problem. It is hoped a well-organised scheme will follow this survey.

65. Subsidy funds were released as usual and were used extensively in all Regions. Table E shows the number of articles bought on subsidy in 1966.

66. The Co-operative Credit Scheme continued to operate and a total of £347,368/11 was lent to credit-worthy co-operative societies.

(c) Animal Husbandry

67. A keen interest was shown in exotic dairy stock in Buganda and Western Regions. The standard of husbandry was reasonably high. About 800 head of exotic dairy cattle were kept in Western Region. Sixteen thousand three hundred and sixty-five (16,365) acres were fenced in Bunyoro and Ankole. Twelve (12) valley tanks were constructed for the conservation of water for cattle.

68. In Buganda, the number of exotic cattle owners and the number of exotic cattle increased during the year. Several modern spray pumps and races were erected, and a number of local spray crushes were put up communally. Old spray crushes have been well maintained. Bugerere and Kyaggwe counties were eventually declared tick-free areas. The number of exotic cattle in the Region is given below.

Table E—Articles bought under the Agriculture

	V. S. 12 Plough	V. S. 10 Plough	V. S. 8 Plough	B. Wires	Cultivators	Tractors (L)	Tractors (S)	Poultry Netting	Fishing Nets	C. Pulpers	Oxcart (S)	Oxcart (L)	Polyculteurs	B. Seeders	Watering Can
BUGANDA REGION															
East Mengo ..	—	—	7	2,227	—	1	3	30	—	—	—	—	—	—	82
West Mengo ..	—	—	—	1,528	—	—	—	—	—	2	—	—	—	10	11
Mubende ..	—	—	—	1,680	—	2	—	4	—	46	—	—	—	—	—
Masaka ..	—	—	—	814	—	1	—	—	—	3	—	—	—	—	43
TOTAL ..	—	—	7	6,249	—	4	3	34	—	51	—	—	—	10	136
WESTERN REGION															
Bunyoro ..	—	—	—	1,290	—	—	3	—	—	4	3	—	—	6	180
Toro ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ankole ..	11	—	5	1,323	13	—	—	—	—	1	—	—	2	—	17
Kigezi ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL ..	11	—	5	2,613	13	—	3	—	—	5	3	—	2	6	197
EASTERN REGION															
Busoga ..	150	8	75	6,561	322	—	—	117	—	1	27	—	—	—	169
Bukedi ..	354	57	2	473	—	—	2	28	—	—	45	27	—	98	127
Bugisu ..	86	—	4	257	—	—	4	8	—	—	27	—	—	61	—
Sebei ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Teso ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Karamoja ..	16	—	509	—	—	1	—	—	—	—	—	—	—	—	1
TOTAL ..	606	65	590	7,291	322	1	6	153	—	1	99	27	—	159	297
NORTHERN REGION															
Lango ..	64	—	328	704	118	—	8	—	—	—	7	5	6	6	7
Acholi ..	—	—	—	2,953	49	15	1	43	458	1	1	2	11	107	39
West Nile ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Madi ..	2	10	20	15	—	—	—	—	—	—	—	—	—	2	9
TOTAL ..	66	10	348	3,672	167	15	9	43	458	1	8	7	17	115	55
TOTAL—ALL REGIONS	683	75	950	19,825	502	20	21	230	458	63	110	34	19	290	685

al Subsidy Scheme

A. H. Seeders	Serere Fraine	Ariana	Tropicuteurs	Ox-chains	Wheelbarrows	Rakes	P. Secateurs	L. Forks	Beehives	Water piping	Fertilizers
— — 1	2 — —	— — —	— — —	— — —	97 68 39	8 7 —	16 1 —	92 19 49 18	— — — —	6,632 — 4,868 —	— 9 25 125
1	2	—	—	—	204	15	17	178	—	11,500	159
— 17 —	— 11 —	— 2 —	— — —	2 7 —	26 424 —	14 71 —	5 55 —	41 7,172 —	— — — —	— — — —	— — — —
17	11	2	—	9	450	85	60	7,213	—	—	—
80 69 28 — 5	52 25 19 — 5	8 3 5 — —	— — — — —	— 114 49 — — 511	— 258 — — — 1	6 34 91 — 1	281 4 1,546 — —	295 29 1,036 — —	11 8 34 — — — —	— — — — — — —	— — — — — — —
182	101	16	—	674	259	132	1,831	1,360	53	—	—
31 25 —	100 28 — 2	— 3 2	— — —	1 33 —	— 9 —	— 11 —	1 — — —	— — — —	— 6 — —	— — — —	— — — 3
56	130	4	—	34	9	11	1	—	6	—	3
256	244	22	—	717	922	243	1,909	8,751	59	11,500	162

Table F—Number of Exotic Cattle in Buganda

Division	Exotic Cattle	
	(1965)	(1966)
Mubende	713	759
Bombo	5,390	5,516
Mpigi	1,012	2,887
Masaka	399	550
TOTAL ..	7,514	9,712

69. In Eastern Region, there was a scarcity of grazing and water during the first quarter of the year and grazing was confined to swamp edges.

Trypanosomiasis caused high mortality of cattle in Samia Bugwe county of Bukedi, but the situation was soon brought under control by the Veterinary Department. Usuku county of Teso remained under quarantine for most parts of the year as a result of Contagious Bovine Pleuro-Pneumonia. All markets in Amuria county of Teso were closed for over two months because of Foot-and-Mouth disease.

70. There was sufficient grazing in the Northern Region for most parts of the year, although there was some scarcity of grazing during the dry season. Nine valley tanks were constructed.

(d) Irrigation and Swamp Reclamation

(i) *Western Region*

71. Toro Development Company Limited continued to irrigate in collaboration with F.A.O. experts at Mubuku/Sebwe Irrigation Scheme. In Kigezi, maintenance of reclaimed land continued.

(ii) *Eastern Region*

72. The Madhvani Sugar Works continued with the irrigation of sugar-cane during the dry seasons. A vegetable irrigation scheme, started at Kirinya Central Prison near Jinja, was reported to perform well. Some overhead irrigation was carried out by the Department of Agriculture at the Citrus Nursery at Kasolwe in Busoga.

73. The Madhvani Sugar Works continued to assist with the work on cotton irrigation and fertilisation at Wabubumba near Kakira.

(iii) *Northern Region*

74. Although it was reported in 1965 that the U.D.C. had taken over the Agoro Irrigation Scheme for proper planning and development, work has not yet started. Approximately 500 acres were surveyed by the Department's planning team and a contour plan with 5-ft. vertical interval contours was drawn to determine the feasibility of the scheme. In Lango District, citrus production by irrigation was also discussed and a site selected at Ongom Dam in Moroto county. A similar discussion took place on a similar scheme to be sited at Atera in Maruzi county.

(c) Resettlement Schemes

75. The unfavourable weather conditions in the Oruchinga Valley did not affect crop yields too badly. The Nakivale refugees continued to live a nomadic form of life in the Valley. Serious drought made it necessary to move animals temporarily to Oruchinga Valley.

76. In Bunyoro, resettlement in Kinyala area near Masindi Port comprised of 787 families with a total of 2,849 persons. During the year it was estimated that settlers cultivated 250 acres of cotton, 500 acres of maize, 100 acres of cassava and 70 acres of sweet potatoes. A good number of settlers are now self-supporting.

77. In Northern Region, the influx of refugees from the Sudan and the Congo to Acholi District continued. Refugees were rounded up and properly settled in Agapo Refugee Settlement. Large acreages were planted to cotton and food crops in order to enable the refugees to become self-sufficient within the shortest possible time. Another refugee settlement area was opened in Acolpi but no agricultural activities were undertaken. In West Nile, attempts to settle the refugees in Luka were unsuccessful.

(f) Agricultural Community Saturation Project

78. This project started in July, 1966, in a number of selected areas each of which consisted of about 100–150 farm families. The staff assigned to the scheme were given proper courses to run it. The selected farmers also attended courses at District Farm Institutes. This project was designed to test the response of farmers to intensive teaching.

(g) Ox-cultivation

79. Ox-cultivation was encouraged in most areas. In Teso, ox-cultivation is an accepted practice. In Bukedi, considerable interest was shown in ox-cultivation and a large acreage was opened by this method of cultivation. The Serere Ox-cultivation Unit attracted considerable attention, and it is reported that over 1,600 farmers attended demonstrations. Elsewhere in the Region, there was an encouraging increase in the use of ox-cultivation.

80. Seven ox-cultivation units were opened in the following Group Farms:—

Ogwangan	...	Acholi
Adyeda	}	...
Inomo		
	...	Lango

In general, the popularity of ox-cultivation continued to grow and is spreading to the west of the Region.

81. In Western Region, Ankole only recorded field work in connection with ox-cultivation. Field staff held ox-cultivation courses for farmers, but despite considerable efforts to popularise ox-cultivation the practice is just beginning to catch on, though on a very modest scale.

VI. AGRICULTURAL EDUCATION

(a) Agricultural Colleges

The minimum entry qualifications to the Colleges for a Diploma course at Bukalasa and Arapai were Cambridge School Certificate or General Certificate of Education with a pass in Mathematics and Credits in Biology and Physics with Chemistry, or pure Physics and Chemistry.

At Bukalasa Agricultural College, 16 girl students were admitted to a new course of Home Economics; the course started in March, 1966.

Bukalasa reported that the building work on staff houses, and the building and conversion of classrooms and livestock buildings started in 1965, was almost completed. A new swimming pool was also completed, providing a valuable recreational facility for staff and students. A start was made on expanding and improving the Engineering, Crop and Animal Husbandry, Soil Science and Farm Management Sections. Due to increased student numbers, difficulties were reported with staff and student accommodation, transport and water supply. Arapai reported a shortage of staff housing. The increase in student numbers has severely taxed the accommodation and catering facilities available. The farm mechanisation workshop was completed to provide valuable training facilities.

Both Colleges received considerable aid in staff and materials from the United States Agency for International Development (U.S.A.I.D.).

There was a considerable improvement in Staffing. Senior staffing is almost at full strength at both Colleges. Some junior posts such as Wardens, Quarter-master, Laboratory Technicians and Demonstrators require to be filled.

At Bukalasa, 101 students were selected for the 1st year. Of these, 5 dropped out during the year, 2 of them to go on overseas study. Two (2) students were asked to discontinue the course because of poor performance and 2 students were asked to repeat their first year. Four (4) former Agricultural Assistants on the course were exempted from the second year, leaving a total of 88 students to continue the second year of studies. Forty-seven (47) students completed the second year, and 44 of these qualified for the final year. The final year consisted of 61 students. At Arapai, 97 students were enrolled for the 1st year; of these, 94 have passed for the second year of the course. In the second year, 84 completed the course; 81 of these have qualified for the final year. The 3 unsuccessful students were asked to repeat their second year; 2 agreed to do so but the third decided to leave. The final year consisted of 30 students.

All 61 final year students sat the Diploma examinations at Bukalasa. Fifty-two (52) of these passed at the first attempt. At Arapai, 27 of the 30 final year students passed their final examinations at the first attempt.

(b) District Farm Institutes

82. The following courses were offered in District Farm Institutes:

Table G—Courses held in District Farm Institutes

Nature of Courses	Number of Students			
	Buganda Region	Western Region	Eastern Region	Northern Region
General Agriculture	545	2787	4361	3937
Animal Husbandry	73	—	—	—
Ox-cultivation	28	—	—	—
Specialised Courses	149	—	—	—
Staff Refresher Courses	117	—	—	—
Community Development	399	140	351	1714
Co-operative Development	62	412	296	1769
Traders	22	—	—	—
Tea Outgrowers	10	—	—	—
Young Farmers of Uganda	350	—	—	2170

As shown in the above Table, various courses were held in the District Farm Institutes. In addition, follow-up safaris were made and available evidence indicates that the courses would have some significant effect on the standard of farming.

(c) Farm Schools

83. Aler Farm School, run by the Lango District Administration, experienced considerable financial difficulties. Building and farm equipment was merely maintained.

84. For the first time, 23 girls were enrolled in Gulu Farm School. There were a total of 109 boys and 23 girls. The strike staged by students in 1966 led to some damage to the buildings and property of the school. As there was also a strike in Bulindi Farm School, the Ministry of Education was prompted to appoint a Committee of Inquiry into the problem. It is hoped that the outcome of the Inquiry will help to solve future problems.

85. The number of farm schools was 8, the same as the previous year. They were: Wairaka (Busoga), Amucu (Teso), Gulu (Acholi), Koboko (West Nile), Aler (Lango), Nyarushange (Kigezi), Bulindi (Bunyoro) and Kabong (Karamoja).

VII. MECHANICAL CULTIVATION

(a) Policy

86. Throughout 1966, the policy of the Special Development Section of the Department of Agriculture remained as follows:—

(i) Expansion of mechanical cultivation by:

(a) increasing the number of group farms and providing bush clearing, land planning and the necessary essential services;

(b) diversifying crop production on the group farms;

(c) increasing the number of Tractor Hire Stations;

(ii) Investigations and the testing of agricultural machinery;

(iii) The training of Agricultural Fitter Mechanics and Tractor Operators;

(iv) Demonstration of ox-cultivation techniques;

(v) Provision of technical advice to private tractor owners.

(b) Tractor Operation

87. By the end of 1965, there were a total of 341 tractors in actual operation under Tractor Hire Service in the country. An additional 222 tractors were purchased from Britain and they included 40 Allis Chalmers ED 40, 50 Ford 4000, 10 Ford 5000, 100 Massey Ferguson 165, and 22 Nuffield 10/60. This purchase increased the total number of tractors available for hire by the farmers to 489 tractors, the rest being used on Government Agricultural stations and Bush-clearing Units. Another 250 Deutz tractors were ordered from a West German firm.

88. The year 1966 was a year of advancement in respect of mechanical cultivation as evidenced by Table H.

Table H—Summary of Tractor Operations, Costs and Revenue

	Northern	Eastern	Western	Buganda	Uganda Total/ Average
Number of tractors	129	168	90	102	489
Total hours worked	70,901	74,533	74,533	44,885	232,682
Average hours per tractor	550	444	471	440	476
Total running costs/hour	15·69	18·50	15·87	17·79	16·97
Total overhead costs/hour	10·42	12·29	10·95	8·96	10·67
Total operational costs/hour	26·11	30·79	26·82	26·75	27·64
Depreciation per hour	6·21	8·91	8·50	9·56	8·30
Actual revenue earned (Shs.)	1,122,249	1,273,081	651,549	611,253	3,696,619
Theoretical Revenue earned	219,424	100,584	186,260	38,487	544,755
Total revenue earned	1,341,673	1,373,665	837,809	649,740	4,241,374
Revenue-earning hours	43,463	49,456	28,657	29,851	151,427
Actual revenue per revenue-earning hour	25·82	25·74	22·74	20·48	24·41
Total revenue per total hour	18·92	18·43	19·78	14·48	18·23
Actual revenue per tractor	8,670	7,578	7,239	5,993	7,560
Total Acreage cultivated	34,207	34,390	20,481	15,284	104,362
Acres per tractor	265	205	228	150	213

89. The 40-per cent increase in the number of tractors resulted in a 30-per cent rise in the total acreage cultivated, being 104,362 acres as compared with 80,846 acres in 1965. However, there was a drop in the total acreage cultivated by each tractor from 241 in 1965 to 213 acres in 1966. The decrease in acreage cultivated by each tractor was caused by several factors:—

(a) The extra new 148 British tractors were put in the field late in the season, and implements and equipment were also delivered late.

(b) Demand for mechanical cultivation on group farms and credit co-operative societies were adversely affected by the late approval of loans.

(c) Demand was also affected by adverse weather conditions which hampered mechanical cultivation during the first rainy season.

(d) A number of tractors were laid idle due to lack of spares occasioned by the delays of receiving spares as a result of the British Seamen's strike and the loss of Agency for International Harvester Machinery in Kampala.

(e) The disturbances of 1966, in Buganda, occurred at a time when usually there is a high demand for mechanical cultivation, and, as such, the tractors were not fully used.

90. Of the 232,682 tractor-hours run by the 489 tractors in 1966, only 151,427 hours were revenue-earning. This amounted to 65 per cent of the total tractor-hours, and of the remaining 35 per cent, 22 per cent were spent on operational running and 13 per cent are Departmental hours.

91. In 1966, the total revenue earned amounted to Shs. 4,241,374 as compared to Shs. 3,002,049 in 1965. There was an increase in total revenue earned of all the tractor-hours from Shs. 16/17 in 1965 to Shs. 18/23 in 1966. The increase of theoretical revenue from Shs. 258,664 in 1965 to Shs. 544,755 was due to an increasing use of tractors on Departmental work. Actual revenue earned per tractor dropped from Shs. 8,165 in 1965 to Shs. 7,560 in 1966.

92. In 1966, the total running cost was Shs. 16/97 per tractor-hour as compared to Shs. 14/43 in 1965. This increase in running costs was caused by the increase in expenditure on spares. In 1966, a number of tractors were in their third year of operation and required some major repairs. The increased need for repairs correspondingly required an increase in the number of mechanics and fitters, hence the rise in wages and workshop costs. There was also a general increase in cost of oil and fuel.

93. There was generally an improvement in operational efficiency of the use of tractors. First and second ploughing was done at an average rate of 1/76 hours per acre as compared to 1/96 hours per acre in 1965. This was a 10-per cent improvement in ploughing efficiency. Disc harrowing was done at the rate of 1/00 hour per acre as compared to 1/06 in 1965. Again this was a 7-per cent improvement in efficiency over the previous season. Rotary cultivation was carried out at the rate of 2/64 hours per acre as compared with 3/27 hours in 1965. This shows a 29-per cent improvement over the previous season. Table I gives the country-wide operational efficiency of tractors.

Table I—Efficiency of Tractor Operation, Costs and Revenue

Operation	Hours/ Acre	Cost/ Acre	Revenue/ Acre
Ploughing ..	1·76	48·65	32·09
Disc Harrowing ..	1·00	27·64	18·13
Rotavating ..	2·64	72·97	48·13
Chisel Ploughing ..	1·05	29·02	19·13
Planting ..	0·73	20·18	13·31
Slashing ..	1·16	32·06	21·15
Spraying ..	0·18	4·98	3·28
Ridging ..	1·14	31·51	20·78
Weeding ..	0·69	19·07	12·58

Total operational cost per hour = Shs. 27·64.

Revenue earned per hour = Shs. 18·23.

94. By the end of 1966, there were 43 group farms as compared with 32 in 1965. The total available group farm land amounted to 94,680 acres and there were a total of 5,176 participants. Ten new group farms were planned by the Land Planning Unit while the Bush-clearing Unit dealt with bush clearing, construction of access and farm roads, wind-rowing and some ploughing. The

Buildings and Water Supplies Division constructed water supplies, staff houses and workshops.

Table J—Number of Group Farms up to 1966

Group Farms			District	Acreage Available	Number of Participants
1.	Pukwero	.. ..	West Nile	510	91
2.	Ragem	.. ..	West Nile	3,000	150*
3.	Adjumani	.. ..	Madi ..	2,000	164*
4.	Pakelle	.. ..	Madi ..	1,650	37
5.	Pabbo	.. ..	Acholi	1,500	80*
6.	Adak	.. ..	Acholi	2,210	104
7.	Koich Laminato	.. ..	Acholi	3,000	155
8.	Ogwang Can	.. ..	Acholi	1,500	165
9.	Pagwang	.. ..	Acholi	900	39
10.	Abayo	.. ..	Acholi	800	98
11.	Awangi	.. ..	Lango ..	1,350	160
12.	Aninolal (Inomo)	.. ..	Lango ..	1,830	100
13.	Adyeda	.. ..	Lango ..	2,940	150
14.	Aboke	.. ..	Lango ..	1,870	120
15.	Alemere (Agwingire)	.. ..	Lango ..	2,000	200*
16.	Atar (Atik)	.. ..	Lango ..	5,000	400*
17.	Alwa	.. ..	Teso ..	2,000	162
18.	Akworo	.. ..	Teso ..	4,160	251
19.	Nariam	.. ..	Teso ..	7,500	444
20.	Labori	.. ..	Teso ..	2,398	123
21.	Amilimil	.. ..	Teso ..	2,472	96
22.	Kateta	.. ..	Teso ..	1,300	116
23.	Bukedea	.. ..	Teso ..	3,000	127*
24.	Siroko	.. ..	Bugisu	3,000	124
25.	Bumiza	.. ..	Bukedi ..	500	72
26.	Kirwoti	.. ..	Sebei ..	900	20*
27.	Chepkwasta	.. ..	Sebei ..	—	36*
28.	Suam	.. ..	Sebei ..	—	100
29.	Nakabale	.. ..	Busoga	500	60
30.	K isozi	.. ..	Busoga	300	40
31.	Bituli	.. ..	Busoga	500	60
32.	Nabirumba	.. ..	Busoga	480	94
33.	Kapyanga	.. ..	Busoga	890	86
34.	Butalale	.. ..	Mubende	500	57
35.	Bulawula	.. ..	Bombo	1,395	30
36.	Rwemigale (Akumulikire)	.. ..	Bunyoro	1,040	56
37.	Ijamirembe (Isimba)	.. ..	Bunyoro	3,400	75
38.	Kihonda	.. ..	Bunyoro	1,800	85
39.	Kitundura	.. ..	Bunyoro	1,000	76
40.	Kisindi	.. ..	Bunyoro	2,000	87 *
41.	Rugendabara	.. ..	Toro ..	13,000	288 *
42.	Bigyera	.. ..	Ankole ..	6,009	165
43.	Kihihi	.. ..	Kigezi ..	1,000	33
TOTAL ..			—	94,680	5,176

* New.

95. The Bush-clearing Division consists of the Ankole Ranches Heavy Caterpillar Unit, the Bunyoro Tsetse Control Heavy Caterpillar Unit, Group Farms Departmental Heavy Caterpillar Unit and Group Farms Departmental Light Caterpillar Unit. The Ankole and Bunyoro Heavy Caterpillar Units were operated by the Special Development Section on behalf of the Ministry of Animal Industry, Game and Fisheries.

VIII. INVESTIGATIONS

(a) General

(1) *Kawanda Farm*

96. The total rainfall for the year was above average, but May was drier than usual and this affected the performance of the first season crops. The second season was considerably wetter than normal.

97. Once again the second rains appear to have provided better growing conditions than the main rains. Crop yields can be seen from Table K.

Table K—Crop Yields

Crop	Variety	1st Rains	2nd Rains	Remarks
Maize ..	Western Queen (MH59)	<i>lb./acre</i> 1,500	<i>lb./acre</i> 3,000	One field 2nd Rains cropping produced 4081 lbs/acre.
Beans ..	Mutike IV and No. 212	223	—	—
	Mutike IV and Banja	—	220	Aprox.
	Banja	—	726	1st Year Field Single Superphosphate and Nitrogen applied.
Groundnuts	B 227	800	—	First rains only.
	Manipintar ..	250	—	First rains only.
Cotton ..	—	673	—	Ten-acre block at Ssenge Farm.

98. In the Livestock Section, the "Twin" experiment, comparing stall fed with grazing of elephant grass, was continued. The herd is now very mixed, consisting of Guernseys, Jerseys, Friesians and Crosses.

99. The Friesian cows yielded well; one cow in her third lactation produced 1,320 gallons of milk. Nine Jersey cows in their third lactation yielded an average of 500 gallons per cow, the best averaging over 600 gallons. A number of promising heifers have produced over 500 gallons of milk in their first lactation. Guernseys production was, on average, lower, mostly below 500 gallons of milk, although one Guernsey did produce 800 gallons during the year. The milk is supplied to staff at Kawanda and Namalere, any surplus being sold off the station.

(2) *Serere Farm*

100. The rains broke early and satisfactory falls allowed early preparation of land. In early 1966, 8.3" of rain fell; April with 13.37" was the wettest month. The late rains, although favouring crop growth, also resulted in considerable weed growth, which the limited labour force available found difficult to control. Towards the end of the year, a severe dry spell of weather was experienced.

101. Shortage of funds necessitated the reduction of the labour force. There was a reduction of 14.7 per cent in man-hours over the last four-year average man-hours worked, although the programme of work was increased. This reduction was obtained by increased efficiency of labour and improved mechanisation.

102. The general crop yield was good. The average yield of cotton was the highest ever. The mean yield from 68½ acres of well-grown main farm crop was 1,220 lb. seed cotton per acre. This included some unsprayed control plots. The Percentage stained cotton was low.

103. Groundnut and Cereal yield was slightly lower than in the previous season. In the main trial area, between 1,300 lb. and 1,400 lb. groundnut in shell were obtained. Serena sorghum yielded 2,227 lb./acre over 15 acres in the first rains. The hybrid HX57 yielded 2,862 lb./acre in a spray trial on 6 acres. Finger millet yields on one large trial were 2,305 lb./acre.

104. An effort was made to produce a maximum supply of "mother" seed for starting second stage multiplication schemes. The demand has risen considerably and Serere can no longer supply the seed required. In all years, complete stocks of seeds have been disposed of and many customers turned away.

Table L—Weights of Cleaned Dressed Seeds Distributed from Serere (lb.)

Seed	1963	1964	1965	1966
Maize (White Star)	9,044	3,125	12,876	8,730
Finger Millet (Engenyi) ..	7,066	400	2,040	4,640
Sorghum (Serena)	4,552	11,926	11,842	24,604
(HX57) Sorghum	—	—	—	1,805
(HX301) Sorghum	—	—	—	1,165
Bulrush Millet	2,605	10,676	1,606	5,490
Groundnuts	23,977	4,760	29,350	—
Groundnuts (Red Beauty) ..	—	—	—	25,875
Groundnuts (Bukene)	—	—	—	2,400
Groundnuts Manipintar ..	—	—	—	1,750
Groundnuts B23a	—	—	—	500

105. The tractor force has been standardised on the Massey Ferguson range and consists of 8 tractors which averaged 830 hrs., a decline of 115 hrs. on the previous year. This was due to the severe dry spell which allowed only a small amount of "back end" ploughing to be carried out.

106. In addition to routine maintenance, the following building projects were completed:—

- (1) Completion of U.S.A.I.D. stores/garage.
- (2) Extension of barbeque-drying floor by 180 sq. yards.
- (3) Erection of 6 car sheds for G. Scale Officers living in Junior Quarters.

Lack of funds prevented the concreting of the main farm yard and stores floor. Only basic maintenance could be carried out on farm roads. Some fencing was done, but severe bush fires have meant that resources had to be diverted to replacing burnt fencing poles.

107. Lack of funds prevented any large-scale clearing of Lantana. The Lantana insect caused severe defoliation and drying of the Lantana in the environs of Serere and little seed was set.

108. Routine destruction of ant-hills was carried out during the dry season.

109. Bush fires resulted in the loss of over 400 acres of valuable dry season grazing, damage to Eucalyptus plantations, Orchards and fencing. One fire lasted 8½ hrs. and threatened to engulf the ginnery and seed store.

(b) Soil and Land Use Survey

110. A preliminary soil survey of the area south of Zeu and Zombo in Okoro county, West Nile, was carried out and a 3,000-acre block selected for the development of a tea estate.

111. Soils were investigated at sites in the Ora Valley, West Nile, Labori in Teso and Omudoi in Lango, to decide their suitability for irrigation schemes. From the climate, soils and water supply, the Ora Valley must be considered one of the most promising sites for irrigation in Uganda.

(c) Soil and Plant Chemistry (General)

112. The 25 factorial permanent manurial experiments on annual crops at nine sub-stations were continued during 1966.

113. At Kawanda, a trial testing the effect of management and fertilizer application on elephant grass yield was continued into the test-cropping phase.

114. Irrigation plus fertilizer experiments on cotton were continued at Mubuku, Toro, and Kakira, south Busoga. At Kakira, as in the previous year, the main effect was due to time of planting. Cotton planted at the end of May out-yielded and gave a higher percentage safi (60 per cent) than cotton planted in late July. Fertilizer effects were inconclusive, and dry early planted cotton gave better yields than the irrigated crop. The position was reversed for late

planted cotton. At Mubuku, there was a marked response to irrigation even though the mean yield for the trial as a whole was very high, 2,164 lb. seed cotton per acre. There was no significant response to fertilizer.

115. At Serere, the fertility experiment entered its 7th cycle and again showed the importance of resting, manure and fertilizers on crop yields. First year cotton yields ranged from 44 lb./acre seed cotton on the plots without resting, manure or fertilizer, to 1,204 lb./acre seed cotton on plots with rest, manure and fertilizers. Resting and fertilizers also increased yields of finger millet from 350 lb./acre dry heads to 1,060 lb./acre. Resting had less effect on yields of groundnuts and sorghum, but manure and phosphate increased yields of groundnuts from 1,157 lb./acre dry nuts to 1,627 lb./acre, and manure, nitrogen and phosphate increased yields of sorghum from 1,178 lb./acre dry heads to 2,553 lb./acre. These results show that by the use of rotations, manure and moderate levels of fertilizer application, the yields of finger millet and sorghum were doubled and yields of cotton almost tripled.

116. Large responses to fertilizers by cotton were also had in other trials. In one, single superphosphate increased seed cotton yields from 705 lb./acre to 1,403 lb./acre.

117. Fertilizer trials conducted on variety trial centres showed that, in all but one, nitrogen and phosphorus both increased yields of cotton. Sulphur had little effect on yields except at Kuju. The largest increases obtained were 530 lb./acre seed cotton from 400 lb./acre calcium ammonium nitrate at Kuju and Pakelle, and 470 lb./acre seed cotton from 200 lb./acre double superphosphate at Kuju. The increases would have been very profitable and would show the results that would be obtained from the use of fertilizers on cotton where it is well cared for and correctly sprayed with insecticide.

118. A programme of fertilizer extension trials conducted by Kawanda, and carried out on farmers' plots to determine the yield responses of cotton, finger millet and maize to sulphate of ammonia and single superphosphate, and of groundnuts to single superphosphate alone, was extended during 1966. A total of slightly more than 1,800 trials were laid down and these were distributed between various crops as follows:—

Table M

Crop	Cotton	Ground-nuts	Finger Millet	Maize	Wheat
No. of trials ..	973	403	236	174	21

Economic responses to applied fertilizers were obtained at many of the centres, particularly in Eastern and Northern Regions.

119. Kawanda Research Station carried out fertilizer trials on farmers' plots, testing the profitability of nitrogen fertilizers on Robusta Coffee at Mityana, Mubende in Buganda and the Shema/Igara counties of Ankole. These trials were started in 1961, and as little further information of value is likely to be gained

from their continuation, they will be terminated at the end of the year's harvest. The general conclusions are that under moderate standards of management, profitable responses can be expected from nitrogenous fertilizers applied at rates up to 95 lb. per acre. The type of fertilizer will be determined largely by soil conditions, calcium ammonium nitrate being recommended for the more acid soils.

120. Extension trials on farmers' Arabica coffee plots in Ibanda, Ankole, and Bugisu/Sebei continued during 1966. At Ibanda, the indications are that the effectiveness of higher rates of nitrogen applications are negated by poor management standards. The most profitable rates are expected to be closer to 45 lb. nitrogen per acre, and not as has been found on Departmental stations at 95–100 lb. nitrogen per acre.

(d) Herbicide Research

121. New cotton herbicides were subjected to further screening at Serere, and several types found to be promising in the previous season were studied in greater detail. The discovery of a harmful residual action of one herbicide upon a following crop of groundnuts has emphasised the need for exhaustive testing before any firm recommendations are made for large-scale use.

(e) Chemical Analysis

122. Numerous soil and leaf herbage analyses were carried out at Kawanda and Serere. Most of these were from station trials, particularly from fertilizer trials. The data is being used to investigate relationships between soil characteristics, crop yield levels and response to fertilizers.

(f) General Entomology

123. Work on cotton was continued with chemical control of insect pests, and comparing the effectiveness of various insecticides.

124. Serere carried out a large number of insecticide and biological field trials; one trial incorporating comparisons of multiple sprays and new formulations showed for the second year that significant increases in cotton yields could be obtained by increasing the number of sprays to 18. On two 10-acre trials, significant responses were obtained when the number of sprays was increased from 4 to 12. A D.D.T. formulated as a 75-per cent micronised powder was tested and showed to be in no way inferior to a 25-per cent D.D.T. miscible liquid. Use of micronised powders could considerably reduce cost.

125. A further field trial was run at Namulonge comparing 4 or 6 applications of D.D.T., endrin and endosulfan against an unsprayed control. Counts of leaves infested with *Aphis gossypii* showed that endosulfan was an effective aphicide in comparison with the other two. In addition, endosulfan reduced the attack of the mite *Tetranychus Spp.*, while D.D.T. and endrin, particularly the weekly applications, increased the infestation. The effect on the mite *Eotetranychus Spp.* which prefers wet conditions was very variable. *Lygus* leaf damage counts showed that cotton had grown under a virtually *Lygus*—free environment. Cotton at Ssenge farm showed normal *Lygus* damage.

126. A Boll-worm/Stainer control trial was also conducted at Namulonge attempting to control the following late season cotton pests, *Dysdercus Spp*, *Cryptophlebia leucotreta*, *Pectinophora*, *Gossypiella*, *Earias biplaga* and *Heliothis armigera*. Six formulations were tried but none gave satisfactory results.

127. Data on alternative host plants, parasites and life histories of the principal boll-worm pest was summarised at Serere. A key plan of the main alternative host plants of boll-worm was drawn up. Valuable information was also obtained on fruiting habit and crop formation of sprayed and unsprayed cotton.

128. Four aphicides were tested at Serere for control of *Aphis Craccivora* (Koch), the vector of groundnut rosette disease. All insecticides gave reductions in the percentage of plants attacked and significant increases in yield compared with unsprayed plots. Products tested were: menazon, dimethoate phosphamidon and endosulfan.

129. A trial conducted at Kamenyamigo Farm on control of *Hypothenemus hampei*, the coffee berry borer, showed that a single application of endosulfan was as effective in reducing the number of beans containing living borers as was a double application.

130. A trial aimed at controlling *Aphis fabae* on the dry season catch crop of beans grown in Kigezi confirmed that no worthwhile insecticidal control of *A. Fabae* during the dry season will be achieved.

131. Comparisons between a pre-planting dip of D.D.T. and a later spray against *Cylas Formicarius* in sweet potatoes showed that dipping the planting slips in a solution of 2 pints of 25 per cent D.D.T.M.L. to 4 gallons water significantly reduced the percentage of infected tubers, the degree of damage and the number of actual *Cylas* recorded.

IX. CROP INVESTIGATIONS AND RESEARCH

(a) Annual Crops

(i) Maize and other Cereals

132. Two new varieties of maize were tested: H632 from Kenya and a Yellow maize from Tanzania.

133. About 400 cobs were selected from a crop of White Star maize grown at Kigumba. The selections were evaluated in progeny rows at Kawanda, the object being to improve the performance of white star and to reduce excessive undesirable variability which had recently become evident.

134. Preliminary variety testing was carried out at 30 centres during the first rains and at 22 centres during the second rains. Varieties tested included White Star, Yellow (Ex Tanzania), Western Queen, H632, and MH59 (improved). The performance of H632 was very good at most centres but appeared to be readily affected by drought, and it takes slightly longer than White Star to mature.

135. A spacing/fertilizer trial was planted at Kawanda during the first rains; spacings in inches were 24×12 , 24×18 , 36×12 and 48×9 . The rates of fertilizer in cwts./acre of calcium ammonium nitrate were 0, $1\frac{1}{2}$ and 3; the maize

variety White Star was used. The trial suffered drought from flowering and throughout cob formation which must have influenced the results. There was a linear grain yield increase in response to fertilizer applications, and the two spacings 36×12 and 24×18 inches gave equal yields which were higher than those of the other two spacings.

(ii) Rice

136. Work on variety selection and agronomy had to be abandoned at district level because of lack of funds.

137. One variety trial grown to maturity in a swamp at Kawanda with supplementary irrigation gave excellent yields. Sindano yielded 7,414 lb./acre and Gamit 6,988 lb./acre. In a semi-abandoned trial in Lango under rain-fed conditions, Gamit yielded 3,207 lb./acre and Sindano 3,729 lb./acre.

138. Towards the end of 1965, the nematode *Aphelenchoides besseyi* was discovered in Senegal and Sierra Leone. At the request of the scientific Secretary of the Organisation of African Unity, member countries were requested to undertake surveys to check on the existence or absence of the nematode within their countries. The first lot of samples collected in Uganda, from Busoga and Bukedi, were sent to the Commonwealth Bureau of Helminthology for examination. These were found to be free from the nematode.

(iii) Wheat

139. Formal variety testing trials were suspended, and bulking of variety No. 43 was stopped because of extreme susceptibility to stem rust.

140. Complaints about millers not accepting wheat from Kigezi was investigated. Samples of wheat sent to the Geology Department Laboratory for testing confirmed that the wheat was contaminated with foreign matter. This could be overcome by avoiding threshing on the bare ground and introducing clean sanitary storage.

(iv) Sorghum

141. The East African Agriculture and Forestry Research Organisation and the United States Agency for International Development have an independent Sorghum Breeding Unit at Serere. The following information was extracted from the Serere report:

142. Grain yields in the variety trials were good, Serena averaging 1,825 lb. per acre and HX57 giving 2,250 lb./acre, both at 27 sites. A 5-acre field at Namulonge bulking Dobbs variety gave 4,900 lb./acre. Serena proved popular in Karamoja.

143. A back cross programme to produce better varieties continued, several of the crosses with Namatare giving high yields. Four male-sterile types developed at Serere showed promise of better hybrid yields, giving between 4,640 and 5,270 lb. per acre compared with 4,200–4,460 lb./acre on the United States male-steriles used so far (CK 60 and Redlan). The new series of hybrids tested showed up 6 pollinator parents as deserving further study as they out-yielded HX57.

144. In the development of quality grain material, E1257 derivatives gave very satisfactory yields (4,450 to Serena's 3,270 lb./acre). It is hoped to have quality grain material out on regional trials in 1968.

145. The introduction of the Genetic male-steriles MS3 to the breeding work includes the development of a recurrent selection system. This involves the intercrossing of a large number of sorghum types, followed by selection and fresh intercrossing. It will be possible to utilise far more material in the programme in this way, and good progress is to be expected. Four recurrent selection bulks have been established for the main hybrid and variety programme, and another for high altitude sorghums.

146. A large number of entries from the collection were crossed to Redlan and to MS3. The hybrids were assessed as pollinator or male-sterile parents, and promising ones are being maintained separately and grown for trials next year. All the material crossed to MS3 will be mixed in a bulk for mass selection, forming a "gene pool" or reserve of variability.

147. The tetraploid programme made good progress; some of the best yielding types, such as Serena S.B.79 and Dobbs, were made autotetraploid and crossed on to the existing material.

148. The first tetraploid yield trials gave two entries which yielded nearly as well as Serena. Further yield trials are planned for next year.

(v) *Beans*

149. Hybridisation work and the evaluation of selections from segregating generations continued. Five varieties were tested in 16 District Variety Trial Centres. The performance at Serere and most of the centres in the South were good. The yield at Nebbi, Kibale, Bulindi and Abi were moderate.

(vi) *Soya-Bean*

150. Varieties which showed promise in the previous year were selected and tested in preliminary formal trials at Kawanda. First season planting was late and performance generally was poor. The second season crop was better and yields of 1,000 lb./acre were obtained.

(vii) *Groundnuts*

151. On trials run at Serere and the District Variety Trial Centres, the varieties Roxo and Tatu introduced from South America out-yielded the standard Valencia varieties. Among the Virginia types, Manipintar and Mt. Makulu Red which is selected from it, yielded well.

152. At Serere, greenhouse and field work continued on crosses made between a rosette-resistant variety (*ex-Senegal*) and our local varieties; this was aimed at producing a short-term rosette-resistant type. The crosses are in the F5 this planting season, and selection will be based on high yield and early maturity as well as rosette resistance.

153. Breeding and selection for a short-termed brown-skinned variety suitable for the export trade continued in first and second rains. The selections from B1 and Bukene are in F6, and their yields are being evaluated. The B1 and short-termed brown Valencia cross is in F5; selections from this cross show better yields, but smaller kernels than those of the former cross.

154. A trial using Patoran herbicide and utilizing hand-weeded band application and total application treatment on ridge and flat was conducted. Data obtained is in the process of being analysed. A further trial on use of Phosphate Nitrogen and Sulphur treatments at different rates showed that only phosphate exerted any significant effect on yield.

(viii) Cotton

155. The new commercial strain of cotton, SATU, which has been accepted for eventual growth in the "S" area, was grown throughout Teso District. Sufficient seed was obtained for replacement next season of B.C.177 in Teso, Lango and Acholi. Trials at 14 centres in Eastern and Northern Regions showed that SATU out-yielded B.C.177 by an average of 45.1 per cent.

156. Reselection amongst the Albar types continued. Reports from the Shirley Institute and the Trade confirm that SATU 65 is a most acceptable cotton. Breeding is directed towards improving fibre strength, maturity and yield. Maintenance of resistance to bacterial blight is ensured by routine screening of all selections.

157. District sowing-date trials, each involving 6 different dates, were sited at centres throughout Northern and Eastern Regions. It will not be possible to make any changes to the present recommended dates until the results of several seasons are available. All sites showed serious yield losses with late sowing, and most showed an increase in percentage "fifi" with late sowing.

158. Results from the pre-cropping/time of ploughing trials are broadly similar to those obtained in 1964-65. Maximum yields were obtained from land ploughed six weeks before sowing. Pre-cropping with sorghum or beans did not reduce the yield of cotton significantly. A trial comparing the effect of sowing at the optimum date on late-ploughed land compared to allowing the usual period of six weeks fallow before sowing was carried out in response to requests. It was clearly demonstrated that immediate sowing was preferable.

(b) Perennial Crops

159. All Expatriate Specialist Research staff of the Coffee Research Unit retired, and Ugandan officers proceeded on courses of further study. The Unit was taken over by the Cocoa Agronomist and all trials in progress were continued, but of necessity, little new work of major importance was initiated, pending the appointment of new specialist staff.

(c) Coffee (Arabica)

(a) *Breeding*

160. The trial of Lyamungu hybrids planted at Ibanda was maintained, and a second identical trial was planted during the year at Bugusege, Eastern Region, with clones from Lyamungu. These two trials form part of the East African Coffee Breeding Programme. The district sorting and intermediate trials, which were planted in 1963 at 14 sites to assess the performance of promising new varieties of Arabica, were maintained, as were the trials to test under Ugandan conditions, three Ruanda selections which are reported to show some resistance to Coffee Berry Disease (C.B.D.).

(b) *Pathology*

161. Field spraying trials for the control of C.B.D. were continued in South Kigezi and in Sebei. Trials continued to show the efficiency of spray applications at medium volume 40 gallons/acre by machines. Indications are that the currently recommended rates of application of $7\frac{1}{2}$ lb. of a 50-per cent copper fungicide could be reduced further and that acceptable control of C.B.D. could still be obtained.

162. Tuzet also showed some promise. Treatment with copper and with Tuzet are both giving increases in yields, but results must be regarded with caution because with the present low incidence of the disease and the lack of any proper assessment of the disease present on trial plots, it is difficult to differentiate what proportion of the yield increase is resulting from control of the disease, and how much is resulting from the anti-leaf fall effect of the fungicides on the trees in general. Spraying against C.B.D. is unlikely to be economic at present levels of yield and management, and attention to improving the standards of Arabica coffee growing is necessary before spraying for the control of C.B.D. can be justified economically.

163. The series of Rust Spray/fertilizer trials in Bugisu continued to show the significant benefit of copper spraying to control leaf rust in combination with applications of nitrogenous fertilizer. Neither treatment showed maximum benefit in the absence of the other.

(c) *Agronomy*

164. The Arabica hedge and spacing trials in Ankole, Bugisu, West Nile and Kigezi were discontinued as being impractical in their present form. A three-row hedge rapidly becomes difficult to prune, spray and harvest properly.

165. Seed plots of SL.14 and SL.28 were maintained at Bugusege and used as the main source of seed for planting Departmental nurseries.

166. Four sites were chosen in the Masaka area to observe the performance of Arabica Coffee in this area. Planting will start in 1967, using Kawanda stock.

(d) Coffee (Robusta)

(a) *Breeding*

167. The Robusta progeny trials (1965) and trials to test the adoption of selected Kawanda mother trees at 6 sites were continued.

(b) Agronomy

168. The nitrogen X cultivation trials on Robusta at Kituza and Namalere were completed, and have shown that slightly lower yields can be expected from Mechanical Cultivation with disc harrows than by hand-hoeing or chemical control. Applications of up to 100 lb. and 150 lb. nitrogen/acre to mulched and unmulched coffee, respectively, can be of advantage, depending on economic factors.

(e) Cocoa

(a) Breeding

169. The 1960 variety trials were continued. In trials at Kituza and Mukono, the 5 best yielding varieties were T82, T76, T65, T63 and T85. Yield differences were not significant between these varieties. There were significant differences in weight of fresh beans per pod, number of beans, and weight of beans between the eleven varieties under test. On pod characteristics, T85 was superior to the rest and T60 inferior. These trials are to continue until suitable mother stock is obtained.

170. The two-year old F1 Hybrid Amazon X Amelonado progeny at Kituza were significantly more vigorous than the seedling Amazon F3 controls.

171. The trial involving the interplanting of coffee with cocoa at Kituza continues. Cocoa is yielding 6 cwts./acre at five years old. Coffee yields have not yet been depressed in comparison with the average production of other coffee at Kituza. The thinning and gradual removal of the coffee will commence shortly.

(b) Pathology

172. Verticillium wilt continued to cause some deaths in cocoa. It is hoped that more detailed study of the disease can be carried out once a plant pathologist is appointed.

(c) Entomology

173. Capsid damage continued to increase. Lack of funds has prevented any spraying being organised. Little use was made of spraying equipment lent to farmers' co-operatives.

(d) Processing

174. It was shown that one of the main difficulties connected with fermentation in the normal West African type boxes was a lack of rapid rise in temperature, due partly to low ambient night temperatures and to slow drainage of pulp from the fermenting mass. Experiments were started using a modification of the Tray Fermentation method as developed at Wacri, Ghana, and these show considerable promise.

(e) Pest Control

175. Monkeys cause considerable damage. The Game Department have put forward a scheme for the control of monkeys.

(f) *Extension*

176. There were no funds provided for Cocoa development in the field during the year. The following acreages were planted using existing seedling stock:—

			<i>Acres</i>
Buganda	...	...	514
Busoga	...	...	80
Bunyoro	...	...	220
Toro ...	...	...	85
			—
	TOTAL	...	899
			—

(f) *Pasture Agronomy and Livestock*

177. New pasture cutting and grazing trials were planted during the year at Kawanda. Increased attention was being paid to problems of establishment of seed-sown (short grass) pastures. Establishment of these pastures had often proved uncertain and expensive in the past. Management investigations on elephant grass and short grasses included spacing and variable seed rates and the use of legumes and fertilizers with variable stocking rates.

178. Investigation into elephant grass-stunting disease continued. Grass trials were test-cropped during the arable phase to assess the effects of the ley treatments on soil fertility.

179. At Serere, all existing trials were continued, and a new series of trials designed to obtain background information regarding the main pasture species was laid down.

180. A grass/legume sward of *Panicum maximum*/*Phaseolus atropurpureus* was extremely good in the third year. In a trial to determine the optimum rate and time of application of Superphosphates to the above sward, it was found that small annual dressings of phosphate increased the yield of herbage to a greater extent than large initial dressings.

181. Trials to determine the seasonal growth patterns of *Hyperhemia rufa*, *P. Maximum*, *Centrosema pubescens* and *Stylosanthes gracilis* showed that early growth of the grasses was more rapid than that of the legumes. Uninterrupted growth of the grasses ceased after flowering. Re-growth on repeatedly cut plots was notably slow. Re-growth of Stylo was good and continued into the early part of the dry season. Yields of Centro were low.

182. The grass/legume/fertilizer trial was test-cropped for the second year, the crops being finger millet, beans and cotton. Yields of finger millet averaged 2,690 lb./acre of grain, and cotton 1,610 lb./acre of seed cotton. Yields of beans were poor due to adverse weather conditions at harvesting.

(g) Grazing Management and Pasture Evaluation

183. Large-scale grazing trials occupying a total of 65 acres were used to evaluate the most suitable pasture species to be planted, the effect of organic fertilizers upon these pastures, the best system of utilisation and the effect of these treatments on subsequent crop yields.

184. The legumes *Stylosanthes gracilis* and *Centrosema pubescens* proved to be extremely valuable for grazing. An unfertilized 10 acre grazing trial which compared these species in combination with *Hypertheca rufa* produced over 600 lb. liveweight gain per acre. There was no significant difference between the pastures, but there was a tendency for Stylo to be most valuable during the dry season. *Phaseolus Atropurpureus* adapted well to Serere conditions and in a species evaluation trial, proved to be outstanding when combined with *Panicum maximum*. Fire has little effect upon this species. *Desmodium Intortum* established very quickly compared with *S. gracilis*, and in the first three months, grazing after establishment produced significantly more liveweight gain. Unfortunately, the *Desmodium* dropped its leaves in the dry season when growth is needed.

185. At Serere and Ngetta, there were significant increases in animal production when single Superphosphate was applied to mixed grass/legume swards. A 6-acre trial at Ngetta produced 374 lb./acre per annum from fertilized plots compared with 308 lb./acre per annum from unfertilized areas. At Serere, single Superphosphate encouraged the growth of *S. gracilis* which had been seeded into permanent pasture and resulted in a 127-per cent increase in animal production. Both the quantity and quality of herbage was improved.

186. Studies were made on the effect of different grazing management practices upon the animal production obtained from selected pastures. Stocking rate proved to be a major factor affecting liveweight gain. Continuous grazing, which was contrasted with two rotational systems, gave significantly more liveweight gain over a three-year period, but resulted in sward deterioration and the invasion by the unpalatable weed *Sporobolus pyramidales*. The results suggest that it is advisable to have three paddocks and rotationally graze each paddock for two weeks. Increasing the rate of rotation so that the period between grazings was three weeks instead of six weeks gave better liveweight gains when herbage quality was low.

(h) Livestock

187. Investigations to find ways of integrating livestock into a farming system for the arable cropping areas continued. The main emphasis of work during the year was to increase animal production per acre by breeding, improved cattle management and feeding. Particular attention was given to the selection and utilisation of suitable pasture leys for cattle. Production in excess of 600 lb. liveweight gain per acre per annum was achieved using local Zebu cattle grazing these pastures.

188. The Serere breeding programme to improve the beef potential of the local small East African Zebu cattle in a tick environment continued. Twenty-five (25) improved bulls were provided for progressive farmers and co-operative centres. In spite of the stock number increasing from 839 to 913 head, good growth rates were recorded, heifers averaging 639 lb. at three years old and steers, 736 lb.

189. The breeding experiment to evaluate the value of crossing local Zebu cattle with Hereford, Aberdeeen Angus and Boran bulls, produced their first progeny. The experiment is being carried out under tick-free conditions at Arapai, Ngetta and Kigumba.

190. Preliminary results suggest that Hereford and Angus crosses are faster-growing than Boran crosses up to six months of age. The results of this experiment should provide valuable information for farmers who eradicate ticks and want to improve their stock.

191. Mortality of the Boran cattle which were maintained in a tick environment was high, being 55 per cent. Mortality was reduced when crossed with local Zebu cattle. Mortality of $\frac{1}{2}$ Boran stock was 28.6 per cent and $\frac{1}{4}$ Boran stock 22.7 per cent. Pure-bred Boran stock are more suited to a tick-free environment. It is important, however, to improve environment and management in order that advantage can be taken of the genetic potential of improved breeds.

192. The Goat-breeding Project was marred by the occurrence of an unidentified disease which affected the heart and lungs, particularly of Boer and Boer crosses. The Veterinary Department are investigating the disease.

X. STAFF

193. During 1966, there was a rapid turnover of staff. Difficulties were experienced in finding accommodation for officers and there is a great need for staff housing in the field. Many officers are compelled to stay at District Headquarters and commute daily to their work in rural areas because of lack of accommodation in these rural areas. Shortage of mileage allocation and, in many cases, means of transport, has made it extremely difficult for staff to carry out their duties as well as they would wish, particularly staff at Assistant Agricultural Officer level.

XI. ACKNOWLEDGMENTS

194. It is a great pleasure to me to convey my gratitude to the staff of the Agriculture Department who have worked so tirelessly in trying to improve the standard of Agriculture in Uganda. It is gratifying to note that mainly by their efforts, we achieved an all-time record for cotton production in 1966. I appreciate that many difficulties were encountered, such as staff shortage, frequent staff changes, lack of accommodation, lack of transport and mileage allocation at many times added to their problems, and made their efforts all that more commendable. I feel confident that the same tireless effort will be forthcoming in the future.

195. May I also extend my thanks for valuable assistance received from all Foreign Agencies and Governments during the past year; it is greatly appreciated.

196. I wish also to acknowledge the co-operation of all Departments of the Government and District Administrations in Uganda. The co-operation and encouragement shown by the Directors and staff of the Cotton Research Corporation, Namulonge, the East African Agriculture and Forestry Research Organisation and the Dean and staff of the Faculty of Agriculture, Makerere, were deeply appreciated.

H. R. BERUNGA,
Commissioner for Agriculture.

ENTEBBE,
13TH, MAY, 1970.

APPENDICES

UGANDA RAINFALL: 1966

Station	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Met. No.
ABI West Nile 3°05' N.; 30°55' E.	1·3 1 17·4	17·2 4 27·9	87·5 10 88·3	138·3 11 130·4	37·6 5 131·5	60·9 6 120·1	101·0 10 132·5	89·7 12 206·7	188·9 13 178·1	141·4 11 90·1	75·3 8 123·2	0·0 — 38·2	939·1 91 1,384·4	Met. No. 86 3002
GULU 2°45' N.; 32°20' E.	27·0 2 13·4	39·1 4 42·5	116·4 12 90·1	178·9 14 175·0	113·5 6 196·6	112·2 8 150·5	229·0 14 167·5	196·5 19 228·9	166·9 11 177·2	142·5 21 165·4	67·9 9 97·7	0·0 — 46·6	1,389·9 120 1,551·4	Met. No. 87 3200
LIRA (NGETTA) Lango 2°17' N.; 32°56' E.	13·7 3 28·7	132·6 7 36·9	86·5 11 88·4	286·8 19 177·7	114·1 10 190·3	154·2 12 126·4	117·1 12 126·5	195·9 18 218·4	165·4 17 170·8	137·8 19 145·3	35·8 5 84·9	7·3 3 44·1	1,446·8 136 1,438·4	Met. No. 87 3202
MOROTO Karamoja 2°17' N.; 34°36' E.	0·0 — 9·4	147·1 11 32·8	178·3 6 75·9	210·0 13 127·0	33·0 4 141·3	27·9 5 84·2	151·6 13 136·0	94·8 5 103·5	48·4 4 50·9	56·5 6 47·7	24·1 3 52·7	3·0 1 26·1	974·7 71 887·5	
SERERE Teso 1°31' N.; 34°11' E.	64·3 3 23·7	147·1 8 58·1	163·8 16 100·9	339·6 20 210·1	145·9 10 192·3	67·0 9 103·6	92·0 9 115·1	101·9 10 164·9	180·3 17 141·8	286·2 5 123·7	71·1 6 98·7	12·3 1 52·1	1,671·5 124 1,385·0	Met. No. 88 3304
MBALE Mbale 1°06' N.; 34°10' E.	6·1 3 25·3	72·8 10 50·7	155·5 14 95·6	227·6 15 167·0	40·6 8 165·0	50·0 10 120·8	83·4 11 114·7	76·7 12 132·6	131·3 15 108·7	98·3 19 86·5	67·4 8 64·8	29·5 1 44·5	1,039·2 127 1,176·2	Met. No. 88 3402
TORORO Bukedi 0°42' N.; 34°10' E.	59·4 6 50·1	97·0 11 71·9	122·2 12 135·7	266·7 18 228·0	151·6 13 221·0	88·4 11 104·5	39·6 7 98·0	128·1 12 116·6	168·5 12 110·4	258·4 19 124·3	127·5 11 104·6	21·1 3 79·6	1,528·5 135 1,444·7	Met. No. 89 3419
JINJA Busoga 0°28' N.; 33°11' E.	43·8 5 70·4	223·6 12 86·7	184·2 13 124·5	203·4 16 194·3	116 8 126·8	134·4 11 59·9	42·3 6 63·4	93·0 10 79·2	104·3 16 94·2	104·6 14 157·4	210·2 10 162·1	20·3 2 95·7	1,480·7 123 1,314·6	Met. No. 89 3343
KABALE Kigezi 1°15' S.; 29°59' E.	45·9 6 61·3	126·2 14 91·2	134·3 19 114·1	174·6 21 138·4	43·6 6 91·1	9·7 4 26·0	0·0 — 19·4	95·6 5 54·9	117·8 15 95·4	99·8 12 97·5	99·0 12 108·2	845·0 12 92·3	1,031·0 126 989·8	Met. No. 91 2900

UGANDA RAINFALL : 1966—continued.

Station		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL	
MBARARA .. Ankole .. 0° 37' S, 30° 39' E.	Total: mm. .. Days .. Mean: mm. ..	28·6 9 44·3	90·6 9 63·5	64·7 9 95·9	65·0 10 123·9	18·6 6 80·5	6·6 2 23·9	2·1 1 20·4	103·8 7 62·6	106·9 15 96·2	92·8 13 104·7	164·8 13 116·3	34·0 7 76·7	778·0 101 908·9	Met. No. 90 3003
FORT PORTAL .. Loro .. 0° 40' N.; 30° 17' E.	Total: mm. .. Days .. Mean: mm. ..	77·8 7 35·5	131·7 10 73·0	132·7 19 136·6	352·6 26 189·9	124·3 12 142·8	82·5 8 80·9	38·5 7 58·7	203·4 15 118·2	130·2 18 187·6	271·0 22 218·3	159·4 14 166·0	91·7 6 80·8	1,795·8 164 1,488·3	Met. No. 89 3003
BULINDI .. Banyoro .. 1° 28' N.; 31° 28' E.	Total: mm. .. Days .. Mean: mm. ..	122·5 6 38·3	62·2 7 58·1	121·3 11 108·7	168·0 14 176·2	41·9 8 124·8	125·0 5 87·0	88·9 10 87·8	153·8 12 155·4	182·2 19 162·4	170·8 11 150·2	60·1 9 113·4	104·1 1 58·2	1,297·7 113 1,320·5	Met. No. 88 3106
MASAKA .. Masaka .. 0° 20' S.; 31° 44' E.	Total: mm. .. Days .. Mean: mm. ..	84·0 11 52·4	148·1 11 63·7	261·9 18 116·2	245·4 18 180·9	109·2 6 166·4	37·0 3 46·4	0·0 — 34·7	96·7 6 53·2	123·0 14 88·7	65·0 9 101·2	98·1 16 98·4	11·7 3 89·4	1,280·1 115 1,091·6	Met. No. 90 3104
KAKUMIRO .. Mudede .. 0° 46' N.; 31° 19' E.	Total: mm. .. Days .. Mean: mm. ..	63·7 7 37·5	118·6 10 57·7	100·4 10 109·9	197·1 13 167·3	28·2 3 102·5	97·8 4 63·2	86·0 7 70·7	102·2 6 130·0	279·0 18 163·9	155·0 14 183·5	59·6 7 140·5	35·8 2 68·9	1,323·4 101 1,295·6	Met. No. 89 3101
SENDA .. Moro .. 0° 29' N.; 32° 01' E.	Total: mm. .. Days .. Mean: mm. ..	54·8 7 48·9	131·4 11 68·0	196·5 17 121·9	252·8 19 170·2	85·4 9 116·0	64·3 6 52·9	5·3 2 46·1	173·2 7 104·7	134·6 14 112·5	90·4 7 142·9	235·7 11 129·4	104·2 7 37·5	1,528·6 101 1,194·4	Met. No. 89 3262
KAMPALA .. Moro .. 0° 19' N.; 32° 33' E.	Total: mm. .. Days .. Mean: mm. ..	77·8 8 60·5	97·1 9 94·9	153·5 15 117·8	212·9 15 173·1	87·4 10 135·2	60·2 9 202·3	33·5 6 52·1	117·3 7 106·7	110·1 12 103·0	110·8 12 112·9	138·6 13 135·7	37·5 4 94·6	1,236·7 117 1,209·6	Met. No. 89 3251
ENTEBBE .. Moro .. 0° 03' N.; 32° 27' E.	Total: mm. .. Days .. Mean: mm. ..	56·2 13 93·8	94·9 13 95·6	274·3 17 167·9	245·2 21 281·1	101·3 11 257·4	202·3 13 98·1	18·3 5 64·4	74·3 3 84·2	30·1 6 82·7	112·9 9 111·8	183·1 12 157·0	52·8 5 122·4	1,445·7 133 1,616·4	Met. No. 89 3266

COTTON PRODUCTION, 1965/66 SEASON

REGION AND ZONE	ACREAGES*		SALES (Tons of Seed Cotton)		HARVESTED YIELD PER ACRE (lb. Seed Cotton)		PRODUCTION (Bales of Lint)	
	Total 1965/66	Mean 1960/61- 1964/65	Total 1965/66	Mean 1960/61- 1964/65	Averages 1965/66	Mean 1960/61- 1964/65	Total 1965/66	Mean 1960/61- 1964/65
<i>Buganda:</i>								
Mengo ..	185,000	205,000	31,045	27,037	376	301	54,890	47,241
Masaka ..	24,000	28,000	3,138	22,213	293	181	5,524	3,981
Mubende ..	55,000	75,000	6,291	7,197	256	217	11,297	12,573
TOTAL ..	264,000	308,000	40,474	36,446	343	254	71,711	63,801
<i>Western:</i>								
Bunyoro ..	76,000	58,000	10,853	5,896	320	222	20,028	10,296
Kazinga Channel ..	16,000	24,000	1,668	3,977	234	367	2,954	6,815
TOTAL ..	92,000	82,000	12,521	9,782	305	262	22,982	17,111
<i>Eastern:</i>								
Busoga ..	578,000	466,000	46,841	47,210	182	222	84,323	84,335
Mbale ..	497,000	338,000	38,831	30,190	175	199	66,610	51,945
Teso ..	237,000	208,000	24,363	15,401	230	149	43,304	26,269
South Teso Segregated ..	37,000	36,000	6,585	4,086	399	248	14,400	6,755
Usuku ..	27,000†	22,000	4,035‡	2,042	335	205	4,388	3,396
TOTAL ..	1,376,000†	1,070,000	120,655‡	98,877	196	205	213,025	172,698
<i>Northern:</i>								
Lango ..	210,000	199,000	36,852	25,317	393	286	62,867	42,181
East Acholi ..	100,000	88,000	11,873	8,711	266	211	20,428	14,377
West Acholi ..	82,000	65,000	12,838	8,333	351	282	22,148	13,553
West Nile ..	139,000†	94,000	17,444‡	11,757	281	261	31,771	21,985
TOTAL ..	531,000†	446,000	79,007‡	54,120	333	269	137,214	92,099
UGANDA TOTAL ..	2,263,000	1,909,000	252,657	199,225	250	230	444,932	345,711

* To the nearest thousand acres.

† The figures do not agree with the Regional totals shown in Appendices III (a) III (c) and IV (c) due to the fact that the boundaries of the zones listed under Eastern and Northern Regions do not coincide with the Regional boundaries. The differences are compensating and the Uganda total agrees with that in Table III (a).

‡ Similarly, these figures do not agree with the Regional totals in Table IV.

§ Excluding 249 bales from Research Stations.

COTTON PRODUCTION, 1966/67 SEASON

APPENDIX II (b)

Monthly Plantings—Acres

REGION AND ZONE	March	April	May	June	July	August	September	October	TOTAL
<i>Buganda:</i>									
Mengo ..	—	133	823	10,815	102,820	17,400	14,988	—	146,979
Masaka ..	—	—	—	—	4,171	3,684*	13,000*	—	20,855*
Mubende ..	—	—	3,542	11,829	14,806	23,254	2,130	—	55,561
TOTAL ..	—	133	4,365	22,644	121,797	44,338	30,118	—	223,395
<i>Western:</i>									
Bunyoro ..	—	—	800	18,500	40,190	25,882	400	—	85,772
Kazinga Channel ..	—	—	—	189	2,649	12,596	8,089	—	23,523
TOTAL ..	—	—	800	18,689	42,839	38,478	8,489	—	109,295
<i>Eastern:</i>									
Busoga ..	—	6,415	111,288	189,331	175,931	60,947	6,009	—	549,921
Mbale ..	—	2,904	50,888	137,329	128,493	58,477	1,776	—	379,867
Teso ..	754	66,259	84,991	96,537	62,476	12,305	—	—	323,322
South Teso Segregated ..	—	7,843	10,701	12,738	3,911	947	—	—	36,140
Usuku ..	140	10,689	11,067	9,205	4,303	—	—	—	35,404
TOTAL ..	894	94,110	268,935	445,140	375,114	132,676	7,785	—	1,324,654
<i>Northern:</i>									
Lango ..	14	1,390	15,258	78,235	85,647	33,938	1,694	—	216,176
East Acholi ..	378	1,649	6,413	16,253	33,660	31,227	7,363	—	96,943
West Acholi ..	—	310	1,178	15,219	31,899	20,110	1,210	—	69,926
West Nile ..	—	—	4,675	35,500	46,852	40,717	5,959	—	133,703
TOTAL ..	392	3,349	27,524	145,207	198,058	125,992	16,226	—	516,748
UGANDA TOTAL ..	1,286	97,592	301,624	631,680	737,808	341,484	62,618	—	2,174,092

*Returns incomplete. Disturbances made proper estimates impossible.

All figures derived from revised planting returns submitted each month by D.A.O.s.

COTTON: MONTHLY PLANTINGS AS PERCENTAGES OF TOTAL

REGION AND ZONE	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	1966/67	Mean 1961/62- 1965/66	1966/67	Mean 1961/62- 1965/66	1966/67	Mean 1961/62- 1965/66	1966/67	Mean 1961/62- 1965/66	1966/67	Mean 1961/62- 1965/66	1966/67	Mean 1961/62- 1965/66
<i>Buganda:</i>												
Mengo	0.1	—	0.6	4.7	7.4	29.2	69.9	37.3	11.8	24.2	10.2	4.6
Masaka	—	—	—	7.2	—	13.4	20.0	22.4	17.7	35.7	62.3	21.3
Mubende	—	—	6.4	2.4	21.3	24.1	26.6	34.6	41.9	32.0	3.8	6.9
TOTAL	0.1	—	2.0	4.3	10.1	26.5	54.5	35.3	19.8	27.2	13.5	6.7
<i>Western:</i>												
Bunyoro	—	—	0.9	2.5	21.6	17.3	46.9	50.4	30.2	27.8	0.4	2.0
Kazinga Channel*	—	—	—	—	0.8	0.2	11.3	7.8	53.5	48.1	34.4	43.9
TOTAL	—	—	0.7	1.9	17.1	13.1	39.2	40.0	35.2	32.7	7.8	12.3
<i>Eastern:</i>												
Busoga	1.2	1.9	20.2	19.7	34.4	30.7	32.0	29.8	11.1	16.9	1.1	1.0
Mbale	0.8	1.6	13.4	15.1	36.2	29.8	33.8	32.9	15.4	18.9	0.4	1.7
Teso*	20.7*	8.9	26.3	32.1	29.9	28.5	19.3	21.0	3.8	9.4	—	—
South Teso Segregated	21.7	7.9	29.6	31.1	35.3	31.2	10.8	16.4	2.6	13.4	—	—
Usuku	30.6*	16.4	31.2	46.2	26.0	27.5	12.2	9.6	—	0.3	—	—
TOTAL	7.2*	3.7	20.3	21.5	33.6	29.9	28.3	28.3	10.0	15.6	0.6	1.0
<i>Northern:</i>												
Lango*	0.6*	0.8	7.1	12.0	36.2	42.1	39.6	32.4	15.7	11.8	0.8	0.9
East Acholi	2.1*	2.3	6.6	13.2	16.8	29.2	34.7	35.7	32.2	17.5	7.6	2.1
West Acholi*	0.4	1.4	1.7	6.9	21.8	32.9	45.6	40.3	28.8	17.0	1.7	1.5
West Nile	—	0.1	3.5	2.8	26.6	26.1	35.0	40.4	30.5	24.7	4.4	5.9
TOTAL	0.7*	1.0	5.3	9.4	28.1	34.6	38.3	36.0	24.4	16.6	3.2	2.4
UGANDA TOTAL	4.5*	2.4	13.9	15.3	29.1	29.8	33.9	31.6	15.7	18.3	2.9	2.6

* Includes March plantings.

COTTON PRODUCTION

Number of Bales of 400 lb., 1907-1966

Season	Bales (Actual)	Bales (5-year average)	Season	Bales (Actual)	Bales (5-year average)
1907 ..	2,000	—	1936/37 ..	332,000	325,000
1908 ..	4,000	—	1937/38 ..	418,000	335,000
1909 ..	5,000	9,000	1938/39 ..	307,000	344,000
1910 ..	12,000	13,000	1939/40 ..	300,000	326,000
1911 ..	20,000	21,000	1940/41 ..	365,000	264,000
1912/13 ..	26,000	25,000	1941/42 ..	238,000	241,000
1913/14 ..	40,000	27,000	1942/43 ..	112,000	236,000
1914/15 ..	26,000	28,000	1943/44 ..	191,000	208,000
1915/16 ..	22,000	29,000	1944/45 ..	272,000	207,000
1916/17 ..	28,000	26,000	1945/46 ..	227,000	218,000
1917/18 ..	27,000	30,000	1946/47 ..	231,000	258,000
1918/19 ..	36,000	44,000	1947/48 ..	170,000	272,000
1919/20 ..	47,000	48,000	1948/49 ..	391,000	295,000
1920/21 ..	81,000	60,000	1949/50 ..	339,000	325,000
1921/22 ..	48,000	78,000	1950/51 ..	346,000	355,000
1922/23 ..	88,000	108,000	1951/52 ..	380,000	357,000
1923/24 ..	128,000	128,000	1952/53 ..	320,000	349,000
1924/25 ..	196,000	145,000	1953/54 ..	398,000	352,000
1925/26 ..	180,000	155,000	1954/55 ..	300,000	351,000
1926/27 ..	134,000	170,000	1955/56 ..	364,000	357,000
1927/28 ..	138,000	156,000	1956/57 ..	372,000	358,000
1928/29 ..	204,000	157,000	1957/58 ..	351,000	370,000
1929/30 ..	125,000	173,000	1958/59 ..	401,000	371,000
1930/31 ..	189,000	204,000	1959/60 ..	360,000	333,000
1931/32 ..	207,000	220,000	1960/61 ..	370,000	334,000
1932/33 ..	295,000	246,000	1961/62 ..	181,000	330,000
1933/34 ..	286,000	271,000	1962/63 ..	359,000	345,000
1934/35 ..	253,000	296,000	1963/64 ..	379,000	360,000
1935/36 ..	316,000	321,000	1964/65 ..	438,000	—
			1965/66 ..	445,000	—

Note: All figures are corrected to 1,000 bales.

ESTIMATED ACREAGE UNDER CROPS, 1965 AND 1966—AFRICAN CULTIVATION

(Thousand Acres)

Crop	BUGANDA		EASTERN		WESTERN		NORTHERN		TOTAL	
	1965	1966	1965	1966	1965	1966	1965	1966	1965	1966
Beans (Mixed and Cowpeas)	228.0	143.1	293.6	294.8	158.2	221.1	237.4	287.9	917.2	946.9
Beans (Soya)	0.6	1.0	—	—	0.2	—	—	—	0.8	1.0
Cassava	115.1	128.0	480.9	595.0	170.8	183.8	349.8	415.8	1,116.6	1,322.6
Cocoa	1.0	1.6	0.1	0.2	0.2	0.5	—	—	1.3	2.3
Coffee (Arabica)	1.0	—	24.4	24.4	17.7	18.6	2.4	5.4	45.5	48.4
Coffee (Robusta)	619.3	710.4	47.7	47.7	19.6	19.5	1.0	0.1	686.7	777.7
Cotton	263.9	223.4	1,374.6	1,327.9	92.7	100.6	529.1	516.8	2,260.3	2,168.7
Grams	0.1	0.4	9.2	20.0	—	—	—	—	9.3	20.4
Groundnuts	88.5	126.9	229.9	293.4	44.5	50.0	219.2	199.1	582.1	669.4
Maize	235.7	154.6	248.3	206.4	102.9	194.6	106.2	134.6	693.1	690.2
Millet (Sorghum)	26.5	37.4	316.2	313.5	146.1	118.8	266.0	260.9	754.8	730.6
Millet (Finger)	39.3	21.6	860.4	802.6	97.0	132.1	408.3	462.4	1,405.0	1,418.7
Millet (Bulrush)	—	—	2.2	5.0	—	—	0.2	7.9	2.4	12.9
Onions	0.4	0.2	—	—	2.9	1.6	—	—	3.3	1.8
Peas (Pigeon)	—	—	4.1	1.9	—	0.9	214.6	213.5	218.7	216.3
Peas (Field)	—	—	—	—	43.3	68.6	—	—	46.3	71.5
Plantains	652.3	759.7	442.9	518.8	260.5	273.1	26.3	18.2	1,382.0	1,569.8
Potatoes (Sweet)	124.1	113.6	399.4	373.5	202.4	342.1	145.0	155.6	870.9	984.8
Potatoes (Solanum)	2.6	1.3	—	—	15.0	20.4	—	—	17.6	21.7
Rice	—	—	3.3	2.1	*	1.9	5.4	4.0	8.7	8.0
Sum-sim	14.6	1.6	19.1	17.4	2.1	2.0	198.1	217.2	233.9	238.2
Tobacco (Fire-cured)	0.2	0.1	—	—	7.1	3.6	4.1	5.0	11.4	8.7
Tobacco (Flue-cured)	—	—	—	—	0.6	0.6	2.4	2.8	3.0	3.4
Tea	0.5	0.5	—	—	3.6	4.9	—	—	4.1	5.4
Wheat	—	—	0.3	—	2.4	4.1	—	—	2.7	4.1
Sugar-cane	0.5	2.0	1.1	3.7	6.7	6.4	11.1	10.1	19.4	22.2
TOTAL	2,417.2	2,430.3	4,757.7	4,848.3	1,396.5	1,769.8	2,725.7	2,917.3	11,297.1	11,965.7

*All Figures corrected to the nearest 100 acres and derived from Districts Returns submitted on Agricultural Form 1 and the R.A.O.'s Annual Report (Buganda Region).

CROP PRODUCTION
ESTIMATED ACREAGES UNDER CROPS, 1965 AND 1966—
AFRICAN CULTIVATION
 BUGANDA REGION

APPENDIX III (b)

(Thousand Acres)

CROP	MENGO		MASAKA		MUBENDE		TOTAL	
	1965	1966	1965	1966	1965	1966	1965	1966
Beans (Mixed and Cowpeas) ..	119.6	72.7	63.0	47.2	45.4	23.2	228.0	143.1
Beans (Soya) ..	0.6	1.0	—	—	—	—	0.6	1.0
Cassava ..	72.9	92.2	15.5	8.8	26.7	27.0	115.1	128.0
Cocoa ..	1.0	1.6	*	—	—	—	1.0	1.6
Coffee (Arabica) ..	—	—	1.0	—	—	—	1.0	—
Coffee (Robusta) ..	325.4	413.4	183.9	186.8	110.0	110.2	619.3	710.4
Cotton ..	179.4	147.0	24.5	20.9	60.0	55.5	263.9	223.4
Grams ..	0.1	0.4	—	—	—	—	0.1	0.4
Groundnuts ..	40.0	65.5	17.0	13.0	31.5	48.4	88.5	126.9
Maize ..	118.7	110.3	52.0	26.7	65.0	17.6	235.7	154.6
Millet (Sorghum) ..	3.6	23.6	12.3	10.1	10.6	3.7	26.5	37.4
Millet (Finger) ..	30.7	19.1	1.2	1.2	7.4	1.3	39.3	21.6
Millet (Bulrush) ..	—	—	—	—	—	—	—	—
Onions ..	—	—	0.1	0.2	0.3	—	0.4	0.2
Peas (Pigeon) ..	—	—	—	—	—	—	—	—
Peas (Field) ..	*	0.1	3.0	2.8	—	—	3.0	2.9
Plantains ..	344.0	454.6	200.7	214.4	107.6	90.7	652.3	759.7
Potatoes (Sweet) ..	89.7	89.1	14.0	14.1	20.4	10.5	124.1	113.7
Potatoes (Solanum) ..	1.0	0.9	—	0.4	1.6	—	2.6	1.3
Rice ..	—	—	—	—	—	—	—	—
Sim-sim ..	6.2	1.6	—	—	8.4	—	14.6	1.6
Tobacco (Fire-cured) ..	—	—	—	—	0.2	0.1	0.2	0.1
Tobacco (Flue-cured) ..	—	—	—	—	—	—	—	—
Tea ..	*	*	0.1	0.1	0.4	0.4	0.5	0.5
Wheat ..	—	—	—	—	—	—	—	—
Sugar-cane ..	0.5	2.0	—	—	—	—	0.5	2.0
TOTAL	1,333.4	1,495.1	588.3	546.7	495.5	388.6	2,417.2	2,430.4

* Under 50 acres.

All figures corrected to the nearest 100 acres.

CROP PRODUCTION
ESTIMATED ACREAGES UNDER CROPS, 1965 AND 1966—
AFRICAN CULTIVATION
EASTERN REGION
(Thousand Acres)

Crop	BUSOGA		BUKEDI		BUGISU AND SEBEL		TESO		KARAMOJA		TOTAL	
	1965	1966	1965	1966	1965	1966	1965	1966	1965	1966	1965	1966
Beans (Mixed and Cowpeas)	..	..	..	..	..	..	..	..	..	..	..	..
Beans (Soya)	..	..	..	..	..	..	..	..	..	..	..	..
Cassava	..	..	..	..	..	..	..	..	..	..	..	..
Cocoa	..	..	..	..	..	..	..	..	..	..	..	..
Coffee (Arabica)	..	..	..	..	..	..	..	..	..	..	..	..
Coffee (Robusta)	..	..	..	..	..	..	..	..	..	..	..	..
Cotton	..	..	..	..	..	..	..	..	..	..	..	..
Grams	..	..	..	..	..	..	..	..	..	..	..	..
Groundnuts	..	..	..	..	..	..	..	..	..	..	..	..
Maize	..	..	..	..	..	..	..	..	..	..	..	..
Millet (Sorghum)	..	..	..	..	..	..	..	..	..	..	..	..
Millet (Finger)	..	..	..	..	..	..	..	..	..	..	..	..
Millet (Bulrush)	..	..	..	..	..	..	..	..	..	..	..	..
Onions	..	..	..	..	..	..	..	..	..	..	..	..
Peas (Pigeon)	..	..	..	..	..	..	..	..	..	..	..	..
Peas (Field)	..	..	..	..	..	..	..	..	..	..	..	..
Plantains	..	..	..	..	..	..	..	..	..	..	..	..
Potatoes (Sweet)	..	..	..	..	..	..	..	..	..	..	..	..
Potatoes (Solanum)	..	..	..	..	..	..	..	..	..	..	..	..
Rice	..	..	..	..	..	..	..	..	..	..	..	..
Sim-sim	..	..	..	..	..	..	..	..	..	..	..	..
Tobacco (Fire-cured)	..	..	..	..	..	..	..	..	..	..	..	..
Tobacco (Flue-cured)	..	..	..	..	..	..	..	..	..	..	..	..
Tea	..	..	..	..	..	..	..	..	..	..	..	..
Wheat	..	..	..	..	..	..	..	..	..	..	..	..
Sugar-cane	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL	1,582.4	1,522.9	1,112.8	1,027.0	575.3	498.9	1,363.6	1,668.2	123.6	131.3	4,757.7	4,848.3

*Under 50 acres.

†Based on Census figure.

All figures corrected to the nearest 100 acres.

CROP PRODUCTION

APPENDIX III (d)

ESTIMATED ACREAGES UNDER CROPS, 1965 AND 1966—AFRICAN CULTIVATION

WESTERN REGION

(Thousand Acres)

Crop	ANKOLE		BUNYORO		KIGEZI		TORO §		TOTAL	
	1965	1966	1965	1966	1965	1966	1965	1966	1965	1966
Beans (Mixed and Cowpeas)	29.2	29.3	19.5	24.6	99.4	135.3	10.1	31.9	158.2	221.1
Beans (Soya)	—	—	—	—	—	—	0.2	*	0.2	*
Cassava	26.7	55.6	38.1	38.1	—	1.3	105.2	88.8	170.8	183.8
Cocoa	—	—	0.1	0.3	—	—	0.1	0.2	0.2	0.5
Coffee (Arabica)	5.1	5.7	0.9	0.9	5.8	6.0	5.9	6.0	17.7	18.6
Coffee (Robusta)	8.5	8.0	3.9	4.3	1.5	1.5	5.7	5.7	19.6	19.5
Cotton	3.2	3.4	77.1	77.1	0.5	0.2	11.9	19.9	92.7	100.6
Grams	—	—	—	—	—	—	—	—	—	—
Groundnuts	20.2	20.9	10.3	13.0	4.5	5.1	9.5	11.0	44.5	50.0
Maize	6.8	7.9	17.9	20.3	53.4	95.2	24.8	71.2	102.9	194.6
Millet (Sorghum)	17.2	18.2	5.3	3.4	112.8	87.3	10.8	9.9	146.1	118.8
Millet (Finger)	43.2	63.3	16.7	13.0	19.4	33.5	17.7	22.3	97.0	132.1
Millet (Bulrush)	—	—	—	—	—	—	—	—	—	—
Onions	0.8	0.8	1.1	0.1	0.3	—	0.7	0.7	2.9	1.6
Peas (Pigeon)	—	—	0.3	0.9	—	—	*	*	0.3	0.9
Peas (Field)	4.9	4.9	—	—	38.0	63.7	0.1	—	43.0	68.6
Plantains	131.0 †	138.0 †	45.0 †	46.3 †	30.5 †	31.6 †	54.0 †	57.2	260.5	273.1
Potatoes (Sweet)	36.7	32.3	26.1	23.4	117.7	268.5	21.9	17.9	202.4	342.1
Potatoes (Solanum)	1.2	0.4	0.9	0.3	12.5	19.2	0.4	0.5	15.0	20.4
Rice	—	—	—	—	—	—	*	1.9	*	1.9
Sim-sim	*	*	2.1	2.0	—	—	*	*	2.1	2.0
Tobacco (Fire-cured)	—	—	6.7	3.6	—	—	0.4	*	7.1	3.6
Tobacco (Flue-cured)	—	0.3	—	—	0.6	0.3	—	—	0.6	0.6
Tea †	—	1.0	0.1	0.2	0.4	0.7	2.3	3.0	3.6	4.9
Wheat	—	—	—	—	2.4	4.1	*	—	2.4	4.1
Sugar-cane	—	—	*	0.1	—	—	6.7	6.3	6.7	6.4
TOTAL	335.5	390.0	272.1	271.9	500.5	753.5	288.4	354.4	1,396.5	1,769.8

* Under 50 acres.

† Based on census figures.

‡ Except for the estimated acreages of plantains, 1965 and 1966 figures for Toro exclude the counties of Bwamba, Busongora and Bukonjo where disturbances prevented any estimates being made.

All figures corrected to the nearest 100 acres.

ESTIMATED ACREAGES UNDER CROPS, 1965 AND 1966— AFRICAN CULTIVATION

NORTHERN REGION

(Thousand Acres)

CROP	LANGO		ACHOLI		WEST NILE		MADI		TOTAL	
	1965	1966	1965	1966	1965	1966	1965	1966	1965	1966
Beans (Mixed and Cowpeas)	95.3	109.3	30.8	25.3	88.5	124.7	22.8	28.6	237.4	287.9
Beans (Soya)	—	—	—	—	—	—	—	—	—	—
Cassava	130.1	138.0	117.2	90.9	90.9†	174.6†	11.6†	12.3†	349.8	415.8
Cocoa	—	—	—	—	—	—	—	—	—	—
Coffee (Arabica)	—	—	—	—	2.4	5.4	—	—	2.4	5.4
Coffee (Robusta)	—	—	—	—	0.1	0.1	—	—	0.1	0.1
Cotton	210.0	216.2	180.6	166.9	116.4	109.1	22.1	24.6	529.1	516.8
Grams	—	—	—	—	—	—	—	—	—	—
Groundnuts	47.6	49.4	85.6	53.4	74.9	52.1	11.1	44.2	219.2	199.1
Maize	23.5	28.2	23.9	26.4	52.5	70.3	6.3	9.7	106.2	134.6
Millet (Sorghum)	149.3	104.4	57.7	75.9	44.0	37.3	15.0	43.3	266.0	260.9
Millet (Finger)	205.2	181.1	91.9	128.1	96.5	140.7	14.7	12.5	408.3	462.4
Millet (Bulrush)	—	—	0.2	7.9	—	—	—	—	0.2	7.9
Onions	—	—	—	—	—	—	—	—	—	—
Peas (Pigeon)	176.0	174.7	33.7	27.7	4.9	11.1	—	—	214.6	213.5
Peas (Field)	—	—	—	—	—	—	—	—	—	—
Plantains	14.1	10.4	7.1	1.3	4.7†	5.9†	0.4†	0.6†	26.3	18.2
Potatoes (Sweet)	35.2	42.3	61.6	42.0	25.4	43.0	22.8	28.3	145.0	155.6
Potatoes (Solanum)	—	—	—	—	—	—	—	—	—	—
Rice	3.1	1.4	—	0.1	0.3	0.1	2.0	2.4	5.4	4.0
Sim-sim	82.5	83.3	92.7	77.5	10.5	43.9	12.4	12.5	198.1	217.2
Tobacco (Fire-cured)	—	—	—	—	4.1	5.0	—	—	4.1	5.0
Tobacco (Flue-cured)	*	*	0.7	0.9	1.7	1.9	—	—	2.4	2.8
Tea	—	—	—	—	—	—	—	—	—	—
Wheat	—	—	—	—	—	—	—	—	—	—
Sugar-cane	*	*	—	—	9.8	10.0	1.3	0.1	11.1	10.1
TOTAL	1,171.9	1,138.7	783.7	724.3	627.6	835.2	142.5	219.1	2,725.7	2,917.3

* Under 50 acres.

† Based on census figure.

All figures corrected to the nearest 100 acres.

CROP PRODUCTS
QUANTITIES MARKETING AND ESTIMATED VALUES
(Values Based on Prices Paid)

REGION/DISTRICT					ROBUSTA COFFEE		ARABICA COFFEE		ALL COFFEE
					Quantity Clean Equivalent	Value	Quantity Clean Equivalent	Value	Value
					Tons	£	Tons	£	£
Eastern:									
Busoga					1,616	115,155	—	—	115,155
Bugisu/Sebei					—	—	9,594	2,185,054	2,185,054
Bukedi					—	—	—	—	—
Teso					—	—	—	—	—
Karamoja					—	—	—	—	—
TOTAL ..					1,616	115,155	9,594	2,185,054	2,300,209
Northern:									
Lango					—	—	—	—	—
Acholi					—	—	—	—	—
West Nile					20	1,920	739	168,741	170,661
Madi					—	—	—	—	—
TOTAL ..					20	1,920	739	168,741	170,661
Western:									
Bunyoro					812	68,087	\$ 2	308	68,395
Toro					133	8,549	141	37,101	45,650
Kigezi					377	35,699	557	104,380	140,079
Ankole					3,330	230,850	1,951	308,839	539,689
TOTAL ..					4,652	343,185	2,651	450,628	793,813
Buganda:									
Mengo }					—	—	—	—	—
Masaka }					140,628	15,420,887	2,173	327,572	15,748,459
Mubende }					—	—	—	—	—
TOTAL ..					140,628	15,420,887	2,173	327,572	15,748,459
UGANDA TOTAL ..					146,916	15,881,147	15,157	3,131,995	19,013,142

* Where growers process their own coffee to an intermediate or final form, the value of such processing is included in the value of the coffee.

NOTE.—Crops included in this table are those for which quantities marketed and values are estimated. Crops for which quantities are estimated but values are not, such as groundnuts, etc. are marketed, but are not included as reliable estimation of Sales and Value are not available.

All figures given to the nearest long ton.

ION
IMATED VALUES, 1966
to Growers)*

APPENDIX IV

SEED COTTON (1965/66 SEASON)		TOBACCO: FLUE-CURED (Cured-Leaf)		TOBACCO: FLUE-CURED (Cured-Leaf)		ALL TOBACCO	TOTAL VALUE	
Quantity	Value	Quantity	Value	Quantity	Value	Value	1965	1966
Tons	£	Tons	£	Tons	£	£	£	£
46,841	2,868,468	—	—	—	—	—	3,305,648	2,983,623
7,493	444,531	—	—	—	—	—	1,966,278	2,629,585
31,303	1,899,270	—	—	—	—	—	2,034,348	1,899,270
34,963	2,159,523	—	—	—	—	—	2,036,081	2,159,523
322	20,660	—	—	—	—	—	7,286	20,660
120,922	7,392,452	—	—	—	—	—	9,349,641	9,692,661
36,852	2,395,228	1	305	—	—	305	2,116,225	2,395,533
24,444	1,576,162	133	47,184	—	—	47,184	1,173,504	1,623,346
13,880	882,872	994	378,452	1,053	107,291	485,743	1,355,640	1,539,276
3,564	222,603	—	—	—	—	—	135,683	222,603
78,740	5,076,865	1,128	425,941	1,053	107,291	533,232	4,781,052	5,780,758
10,853	689,448	—	—	490	38,112	38,112	654,461	795,955
856	52,220	—	—	—	—	—	349,157	97,870
30	2,049	16	4,737	—	—	4,737	192,237	146,865
782	44,946	—	—	—	—	—	663,558	584,635
12,521	788,663	16	4,737	490	38,112	42,849	1,859,413	1,625,325
31,045	2,020,879	—	—	—	—	—	—	—
3,135	191,369	—	—	—	—	—	14,808,889	18,362,424
6,291	401,376	—	—	5	341	341	—	—
40,474	2,613,624	—	—	5	341	341	14,808,889	18,362,424
252,657	15,871,604	1,144	430,678	1,548	145,744	576,422	30,798,995	35,461,168

processing is included in the price paid.

re known with reasonable accuracy. Considerable quantities of crops such as maize,
t available.

OVERSEAS EXPORTS OF AGRICULTURAL PRODUCE, 1964-1966

ARTICLE	UNIT	QUANTITIES			VALUE IN £		
		1964	1965	1966	1964	1965	1966
<i>Oilseeds and Products:</i>							
Castor Seed ..	Tons ..	1,967	1,618	1,926	88,471	69,402	81,459
Groundnuts ..	Tons ..	3,804	316	8,121	223,273	24,595	474,553
Sesame Seed ..	Tons ..	917	810	849	59,425	56,451	68,918
Sunflower Seed ..	Tons ..	108	105	66	4,499	4,320	4,221
Cotton Seed Cake ..	Tons ..	61,834	68,025	70,691	1,535,661	1,795,099	1,952,457
Cotton Seed Oil ..	Tons ..	1,560	861	87	164,460	118,642	13,821
Other Vegetable Oils ..	Tons ..	41	6	2	3,545	1,481	204
Other Oilseed Cakes, Meals and other Vegetable Oil residues	Tons ..	590	2,047	838	18,712	45,850	27,196
<i>Fibres:</i>							
Cotton, raw ..	Tons ..	63,485	68,002	68,699	15,856,857	16,761,627	15,344,586
Sisal ..	Tons ..	274	143	3	29,465	10,142	4,039
<i>Beverage Crops and Tobacco:</i>							
Coffee, not roasted ..	Tons ..	137,455	155,295	164,647	35,378,156	30,421,334	34,783,274
Tea ..	Tons ..	5,992	6,667	8,688	2,211,596	2,388,418	3,151,215
Unmanufactured Tobacco ..	Tons ..	28	335	528	5,352	67,409	127,883
Manufactured Tobacco ..	Lb. ..	4,912	—	1,071	2,255	—	518
<i>Spices and Drugs:</i>							
Chillies ..	Tons ..	382	198	402	43,595	56,124	126,975
Papain ..	Tons ..	190	175	113	356,334	262,669	123,286
Vanilla ..	Tons ..	2	3	6	8,462	7,946	16,489
<i>Beans and Pulses:</i>							
Soya Beans ..	Tons ..	297	78	150	8,596	2,559	6,891
Others ..	Tons ..	771	550	1,749	27,543	22,852	45,481
<i>Cereals:</i>							
Maize (unmilled) ..	Tons ..	1,064	1,619	27,747	24,922	42,255	570,591
Maize meal ..	Tons ..	1,860	2,255	8,698	33,162	44,631	165,629
Others (milled) ..	Tons ..	811	299	3,116	25,223	10,796	66,708
<i>Miscellaneous:</i>							
Rubber ..	Tons ..	—	—	2	—	—	433
Ethyl Alcohol ..	Imp. Gal. ..	2,775	985	308	947	332	159
Sugar ..	Tons ..	3,098	489	402	194,414	30,388	16,375
		TOTAL £			56,304,925	52,245,322	57,173,421

Source: East African Customs and Excise Annual Trade Reports.

EXPORTS OF AGRICULTURAL PRODUCE TO KENYA AND TANZANIA, 1966 APPENDIX V (b)

ARTICLE	UNIT	QUANTITIES			VALUE IN £		
		To Kenya	To Tanzania	Total	To Kenya	To Tanzania	Total
<i>Oilseeds and Products:</i>							
Cotton Seed Cake ..	Tons ..	960	—	960	23,071	—	23,071
Other Oilseed Cakes, Meals and other Vegetable Oil Residues ..	Tons ..	130	—	130	3,881	—	3,881
Sesame Seed ..	Tons ..	2	36	38	123	2846	2,969
Groundnuts ..	Tons ..	40	274	314	2,812	15,839	18,651
Cotton Seed Oil ..	Tons ..	4,988	380	5,368	676,249	50,993	727,242
Groundnuts Oil ..	Tons ..	70	2	72	1,573	200	1,773
Other Vegetable Oils ..	Tons ..	4	1	5	510	60	570
<i>Beverage Crops and Tobacco:</i>							
Coffee, not roasted ..	Tons ..	38	—	38	1,987	—	1,987
Tea ..	Tons ..	61	53	114	17,683	15,761	33,444
Unmanufactured Tobacco ..	Lb. ..	2,861,405	1,381,789	4,243,194	406,552	158,345	564,897
Cigars, Cheroots and Manufactured Tobacco ..	Lb. ..	69,457	31,528	100,985	49,627	25,676	75,303
<i>Spices:</i>							
Chillies ..	Tons ..	19	—	19	4,904	—	4,904
Others ..	Tons ..	138	15	153	26,650	1,577	28,227
<i>Fibres:</i>							
Cotton Linters ..	Tons ..	20	2	22	1,855	133	1,988
Cotton waste, not carded or combed ..	Tons ..	143	49	192	16,102	5,596	21,698
<i>Cereals:</i>							
Maize (unmilled) ..	Tons ..	5,988	8,673	14,661	99,306	162,751	262,057
Millet ..	Tons ..	570	118	688	15,906	3,385	19,291
Others ..	Tons ..	271	—	271	7,879	—	7,879
<i>Brans, Pollards, Sharps and by-products of Cereals, Grains and Leguminous Vegetables:</i>							
Maize germ meal ..	Tons ..	50	468	518	925	7,104	8,029
Others ..	Tons ..	4,810	60	4,870	68,492	1,142	69,634
<i>Pulses:</i>							
Beans, Peas and Lentils ..	Tons ..	4,083	1531	5,614	100,637	37,531	138,168
<i>Miscellaneous:</i>							
Rubber ..	Tons ..	1	—	1	193	—	193
Ethyl Alcohol ..	Imp. Gal. ..	72,319	24,008	96,327	22,144	7,091	29,235
Sugar ..	Tons ..	4,465	—	4,465	219,966	—	219,966
Jaggery ..	Tons ..	—	—	—	—	—	—
Molasses ..	Tons ..	752	—	752	1,917	—	1,917
TOTAL £					1,770,944	496,030	2,266,974

Source: East African Customs & Excise Annual Trade Report.

CROP PRODUCTION

Plantation Crop Production, 1965-1966

CROP	PRODUCTION UNIT	ESTIMATED ACREAGES		ESTIMATED PRODUCTION			
				Quantity		Value	
		1965	1966	1965	1966	1965	1966
SUGAR	Estates ..	44,384	42,924	(Tons)	(Tons)	£	£
	Outgrowers ..	1,703	NA	} 115,670	125,478	4,770,606	5,107,620
TEA ..	Estates ..	25,377*	26,869				
	Outgrowers ..	4,008	5,504	} 8,233	11,037	3,043,228	4,079,380
SISAL	Estates ..	2,800	2,300				
COCOA	Estates ..	146	237	} 12	24	2,196	6,466
	Smallholdings	1,378†	2,277†				

* Revised based on recent trends. Acreage returns not available.

† Includes 51 acres grown on Departmental farms.

PRICES PAID TO FARMERS—1966

Cents per lb.

Produce	Centres	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
BEANS ..	Kampala ..	20	20	20	20	23	20	18	22	26	20	25	19
	Iganga ..	20	—	—	20	20	20	18	20	—	22	25	18
	Soroti ..	25	25	25	26	25	25	—	25	—	25	25	25
	Fort Portal	20	20	20	20	20	25	—	20	—	26	25	20
DRIED CASSAVA ..	Kampala ..	20	24	21	18	16	18	15	12	12	12	14	12
	Iganga ..	16	15	16	10	—	8	6	15	—	7	6	6
	Soroti ..	20	21	12	12	14	12	12	—	—	10	10	10
	Fort Portal	—	—	—	—	—	—	—	—	—	—	—	—
SHELLED GROUNDNUTS	Kampala ..	60	63	60	57	—	—	38	—	45	42	45	47
	Iganga ..	70	69	63	50	—	—	38	46	—	40	—	50
	Soroti ..	70	66	60	60	—	—	—	45	—	45	50	50
	Fort Portal	70	60	65	65	—	—	—	40	40	50	50	50
UNSHELLED GROUNDNUTS ..	Kampala ..	35	35	36	35	—	—	25	—	26	25	26	29
	Iganga ..	40	45	38	—	—	—	—	25	—	25	25	25
	Soroti ..	40	33	40	—	—	—	25	25	—	25	27	27
	Fort Portal	—	—	—	—	—	—	—	—	—	—	—	—
MAIZE ..	Kampala ..	16	14	10	11	9	9	8	10	10	10	10	14
	Iganga ..	14	12	11	10	7	8	7	8	—	10	8	10
	Soroti ..	20	20	15	17	11	15	15	12	—	13	15	15
	Fort Portal	16	12	8	8	8	8	7	6	—	7	7	9
SORGHUM ..	Kampala ..	16	—	—	—	—	15	12	15	20	20	20	—
	Iganga ..	—	—	15	15	—	—	—	15	—	15	15	—
	Soroti ..	20	20	12	25	—	15	15	15	—	15	15	15
	Fort Portal	—	—	—	—	—	—	—	—	—	—	—	—
FINGER MILLET ..	Kampala ..	34	30	30	30	30	—	25	—	—	—	25	25
	Iganga ..	30	32	30	30	25	—	—	—	—	—	25	25
	Soroti ..	37	37	33	30	30	—	25	25	—	26	27	27
	Fort Portal	—	—	—	—	—	30	—	—	—	—	—	—

POPULATION AND AVAILABILITY OF LAND

Region/District	Total area	Area of land excluding open water, swamps and reserved forests	Cultivated area	Population*	Population Density	Cultivated land per head of population	Estimated available land per head of population	Ratio of available land to cultivated land
	Sq. miles	Sq. miles	1,000 acres		Per sq. mile	Acres	Acres	
<i>Buganda:</i>								
Mengo ..	14,417	9,221	1,199	1,499,000	163	0.8	4.1	4.9
Masaka ..	7,978	3,649	485	501,000	137	1.0	4.7	4.8
Mubende ..	2,701	2,570	185	107,000	42	1.7	15.4	8.9
TOTAL ..	25,096	15,440	1,869	2,107,000	136	0.9	4.7	5.3
<i>Eastern:</i>								
Busoga ..	6,940	3,133	994	736,000	234	1.4	2.7	2.7
Bugisu, Sebei and Mbale Township	1,677	1,170	630	402,000	344	1.6	1.9	1.2
Bukedi ..	1,786	1,533	784	431,000	281	1.8	2.3	1.3
Teso ..	4,954	4,249	943	475,000	112	2.0	5.7	2.9
Karamoja ..	9,230	8,094	125	194,000	24	0.6	26.7	41.4
TOTAL ..	24,587	18,179	3,476	2,238,000	123	1.6	5.2	3.3
<i>Northern:</i>								
Acholi ..	10,854	10,347	580	319,000	31	1.8	20.8	11.4
Lango ..	5,054	4,333	920	395,000	91	2.3	7.0	3.0
West Nile/Madi ..	6,051	5,252	788	481,000	92	1.6	7.0	4.3
TOTAL ..	21,959	19,932	2,288	1,195,000	60	1.9	10.7	5.6
<i>Western:</i>								
Bunyoro ..	5,935	4,025	230	134,000	33	1.7	19.2	11.2
Toro ..	5,233	3,920	350	391,000	100	0.9	6.4	7.2
Ankole ..	6,276	5,378	553	592,000	110	0.9	5.8	6.2
Kigezi ..	2,039	1,689	546	538,000	319	1.0	2.0	2.0
TOTAL ..	19,483	15,012	1,679	1,655,000	110	1.0	5.8	5.7
UGANDA TOTAL ..	91,125	68,563	9,312	7,195,000	105	1.3	6.1	4.7

*Estimates for January, 1966, based on 1959 Census of Population and inter-censal rates of growth. This Calculation does not take into account internal migration between districts. Figures are given to the nearest thousand.

PRINCIPAL AGRICULTURAL LEGISLATION

Subject	Act	Statutory Instrument	Title	Object
Coffee ..	—	48	Coffee (Export Duty) (Variation of Schedule) Order.	To amend Coffee (Export Duty) Ordinance, 1960.
	—	83	Coffee (Export to Quota markets) (Prohibition) Order.	To prohibit the export of all types of processed coffee to quota markets.
	—	116	Coffee markets and Buyers licences (Amendment) Notice.	To amend S.1 No. 33 of 1964.
	—	138	Coffee markets and Buyers licences (Amendment) (No. 2) Notice.	To amend S.1 No. 33 of 1964.
Cotton ..	—	26	Lint Marketing Rules ..	Rules to ensure that ginneries submit true and complete returns and also ensure that bales of lint are properly packed.
	—	128	Specified Percentage (Variation) Order.	Varying the co-operative ginning percentages.
	—	173	Cotton (Miscellaneous Prices) Order	Prices to be paid by L.M.B. for Lint Cotton and seed cotton ex-ginney.
	3	—	Uganda Tea Growers Corporation Act.	An Act to establish a Uganda Tea Growers Corporation for the control of production and marketing of smallholders' tea.
	—	33	Uganda Tea Growers Corporation Act (Commencement) Instrument.	Declaring the date when the Uganda Tea Growers Corporation Act shall come into force.
Tobacco ..	28	—	Tobacco (control and Marketing) Act.	An Act to control the production and marketing of leaf tobacco.
	—	177	Grading of Air-cured and fire-cured leaf Tobacco Order.	Fixing the grade of Air-cured and Fire-cured Leaf tobacco.
Agricultural Produce	2	—	Agricultural Produce (Prices) Act ..	An Act to regulate the payment for Agricultural produce and certain other goods in terms of cents.

DEPARTMENT OF AGRICULTURE

Disposition of Staff as at 1st July 1966

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